BETTER FRUIT

VOLUME XVI OCTOBER, 1921 NUMBER 4

Features in This Issue:—

How Young America Can Best Celebrate National Apple Day

BETTER FRUIT PUBLISHING COMPANY
Publishers *Portland, Oregon*

20 cents the single copy. Subscription, One Dollar per year in the United States. Canada and Foreign, including postage, Two Dollars, Payable in American Exchange

Entered as second class matter at the post office at Portland, Oregon, under the March 3, 1897.

How Can the Farmer Prosper Unless the Railroads Prosper?

THE development and prosperity of farming in the United States have in the past gone hand in hand with the growth and development of the railroads. Ahead of or beside the courageous pioneer has gone the railway.

The railway is dependent on the farmer for the tonnage which enables it to live and conduct its business. Likewise the farmer is dependent on good and adequate service by the railway as the means of getting his products to the markets of this country and the world under conditions which will enable him to prosper.

Railway Development at a Standstill

The development of the railways has been practically at a standstill for some years. No industry can grow unless it can get people to put new capital into it. No industry can get people to invest capital unless it can pay a return on this additional capital.

Stagnation in the railroad industry is a menace to the farmer. The products of the farms are constantly increasing. Without increased means of transportation these increased products of the farms cannot be carried to market.

The Earning Power of the Railroads Was Practically Destroyed During the War

They are now trying to get it back. They want to get it back so they can provide additional locomotives and cars to handle the increase in traffic and provide for the future development of the country. They must raise large amounts of new capital to provide these facilities.

Not Asking Return on "Watered" Stock

Every farmer and business man knows it is impossible at present to borrow large amounts of money for even 6 per cent. How can the railroads be expected to raise new capital for new facilities if they are not allowed to earn at least 6 per cent, which the Interstate Commerce Commission has held they need?

Is this 6 per cent on "watered" stock? No. It is not based on stock at all, or on bonds either. It is based on the minimum value of the property which the railways devote every day to the public service in transportation—tracks, stations, locomotives, cars, shops, and so on. This valuation has been made by the Interstate Commerce Commission under the Valuation Act fathered by Senator LaFollette of Wisconsin eight years ago.

It is not based on what it would cost to rebuild the railroads at present high prices of materials and wages, but **on what it would cost to rebuild them at pre-war wages and prices as they stood in 1914.** A valuation based on present wages and prices would be twice as great.

Some railroads are "overcapitalized." Many, including most of the big systems, are undercapitalized. But neither in the one case nor the other does this affect the basis on which rates are made.

What Regulation Can Not Do

The farmer has just lost a friend and the country a valuable citizen by the death of ex-Judge C. A. Prouty. He was for seventeen years a member of the Interstate Commerce Commission. He was in charge of the valuation of the railroads from the time it was begun until his death. He said:

"We can regulate the railways. We cannot by legislation force one single dollar of private capital into railway investment against its will."

The farmer, by favoring regulations that will help the railways to regain their reasonable earning power, can help them to attract hundreds of millions of dollars needed for rehabilitation and enlargement of railway facilities and for increased and improved transportation service to the farmer.

The further development of the country will be arrested and the farmers and all other classes seriously injured unless the railways are given opportunity to raise the capital needed to enable them to make their service better and more adequate.

Association of Railway Executives

61 BROADWAY
NEW YORK

764 TRANSPORTATION BUILDING
CHICAGO, ILL.

MUNSEY BUILDING
WASHINGTON, D. C.

Those desiring further information on the railroad situation are requested to address the offices of the Association or the president of any of the individual railroads.

SYKES' SERVICE BULLETIN

Vol. I Portland, Oregon, October, 1921 No. 2

What Is Sykes Pack?

The Sykes Safety Separator Apple Wrap is a moderately thick flexible sheet of wood pulp, cut to fit the standard apple box.

Each layer or tier of fruit is separated from the one above and below by one of these Separator wraps. Each size of fruit has a special wrap insuring the proper position of the fruit in packing as well as preventing the individual apples from touching each other.

A series of cups are stamped in a mathematically correct position, according to the size of the fruit. A series of cuts in each cup provides tongues of paper between the individual fruits of each tier—the body of the wrap itself separating the layers or tiers—hence the name "Separator."

This is the SYKES SYSTEM—an interlocking of correctly sized fruit, correctly packed, forming one solid structure of fruit, the individual apples being separated from each other by these cuts or tongues of the cups. If there be any shrinkage during storage, each apple retains its position, the interlocking principle preventing any bruising, hence helping to prevent any decay.

How to Pack Sykes

Many thoughtless criticisms have been made of the Sykes Pack by those who have never seen the "Sykes System" CORRECTLY packed.

The fundamental principle of the "Sykes System" is summed up in the term "bridging the arch"—in other words, an INTERLOCKED structure. A special wrap is provided for each standard size of fruit. If the wrong wrap is used, the experienced Sykes packer detects mistake quickly. If the fruit has been sized wrong, he quickly catches that error.

The first layer or tier MUST be placed CORRECTLY in position. It is the FOUNDATION of the "Sykes System."

The box is set flat on a flat table. A Separator wrap is placed in the bottom of the box. The first tier of apples is placed, stem down, in the cups of the wrap (the number and arrangement of cups varying with the size of fruit). It takes but a few moments to place the first tier CORRECTLY. If the fruit has been properly sized, the individual apples will not touch each other, the spaces between the apples forming uniform triangles.

When the first tier has been placed, a Separator wrap is placed over the tier. The cups nest in to the triangular spaces formed by the apples of the first tier. The fruit of the second layer is then placed in the cups, completing the second tier. Again, the apples of the second tier do not touch each other—the spaces between the apples again forming small triangles.

The third Separator wrap is placed in position. The cups again nest into the triangular spaces. This process continues until next to the top tier is in position.

A soft wood board, which will fit easily into the box, is used to press down the fruit uniformly—light pressure in the center, heavier on ends—LOCKING each tier into the triangular spaces in the tier below—in the layman's words, "bridging the arches."

The top tier is then placed into position, giving the required bulge at the center. The experienced packer soon learns how to make a finished job in placing the top tier or facing the box. To protect the top tier another Separator wrap is placed in position and the lid nailed fast.

Every tier or layer is thus uniformly wedged into the spaces below, with the exception of the first or bottom tier, which forms the foundation for the series of arches.

Oiled Wraps Popular

Following the several experiments made by Federal experts during the past two seasons, using various oil formulas, the use of oiled wraps in the Northwest is growing rapidly. Oiled wraps appear to be the NEXT step in the evolution of Scientific Apple Packing.

Oiled wraps, it has been proven, reduce the amount of scald in storage—practically all of the experiments have proven most of the claims for oiled wraps.

At a trifle additional cost, Sykes Safety Separator Wraps, treated with an approved oil preparation, may now be had in limited quantities. Next season there will be an ample supply for all packers.

The oiled wrap, without doubt, has come to stay—progressive manufacturers are preparing to meet the demand.

Error in Figures

In our September Bulletin, under the caption, "Sykeing California Oranges," the types made us say "It takes 83 wraps to pack a box of oranges."

This error was so apparent that scores of readers have called our attention to it.

This paragraph should have read, "1000 wraps (1 bundle) will pack 83 boxes of oranges." Every packer who read the September Bulletin knew instantly that the figures were mixed.

Why Pack Sykes?

Does the hit-and-miss practice of close paper wraps, with corners of boxes stuffed with paper, or frequently a small apple wedged in to make a tight layer—produce the correct pack?

What is the answer—if you have SUPERIOR fruit—which should be sized correctly and packed correctly—if you expect it to keep in storage?

SUPERIOR fruit has a value. Is it not false economy to pack superior fruit as cheaply as possible—thereby taking all of the risks of common or cold storage?

Sykeing Branded Apples

Does it pay to pack GOOD fruit in the cheapest manner possible—with the cheapest wraps known—and under a hit-and-miss practice?

Have you a right to expect good RESULTS from such a pack? Is it not logical that you would get BETTER results from CORRECT sizing and CORRECT pack?

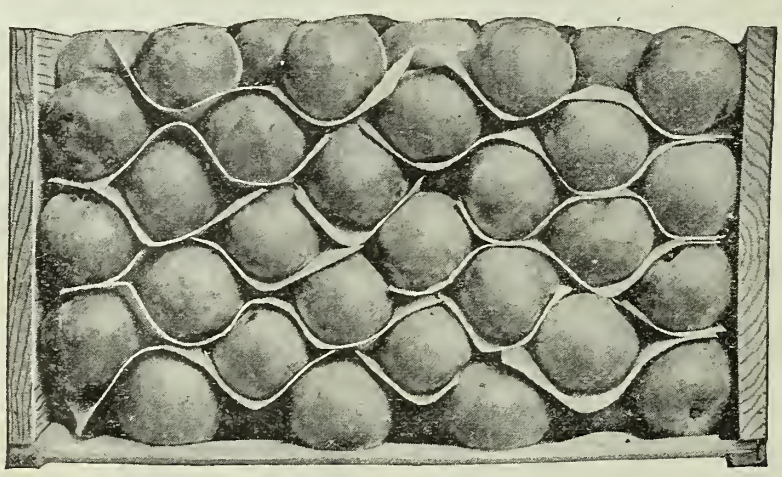
Until you use Sykes Safety Separator Wraps, you will never know how well your fruit will keep.

During the convention of the National Restaurant Owners' Association, which met in Los Angeles October 3-8, several splendid displays were made of Northwestern apples which had been branded by the Alsberg Electric Branding Machine.

The display of the "Blue Goose" and "Skookum" packs was a remarkably fine one. Practically every delegate visiting the fruit show was favorably impressed.

By courtesy of the American Fruit Growers, who made the display, several boxes of Syked Northwestern apples had a prominent place in the exhibit. The appearance of these boxes was most attractive.

If your supply house cannot furnish you with Sykes Safety Separator Wraps NOW—please notify BETTER FRUIT at once—and your order will be promptly filled.



This is a Side View

This is a side view of a Syked apple box showing how each tier of fruit nestles into the spaces in the tier below—the tongues of paper in the cuts or cups separating the individual apples while the entire sheet or wrap separates the tiers. This gives perfect aeration of fruit, assisting nature in preventing scald and decay.

BETTER FRUIT

Pioneer Horticultural Journal of the Pacific Northwest

Entered as second-class matter April 22, 1918, at the Postoffice at Portland, Oregon, under act of Congress of March 3, 1879

VOLUME XVI | PORTLAND, OREGON, OCTOBER, 1921 | NUMBER 4

The Entree of the Basket Into Fancy Appledom

By the Editor

As the price of fine quality apples has risen and a greater number of persons are now living in apartments and other quarters where the storage space is restricted, the demand for something in the way of a container that would be larger than the old-time peck measure and yet something smaller than the barrel has been gradually growing. In the Far West this demand has been supplied by the extra fancy or fancy selected packed box. Boxes, however, by reason of cost, are not available in many of the apple growing sections of the country in addition to the fact that they are not as well known or as well liked as baskets, which can be put to many uses after they are emptied of their fruits. Another reason for the greater use of the basket than formerly for shipping fruit is that it is being more scientifically made—that it permits of a tight, fancy pack and is growoing in all sections of the country as a practical, as well as a show conotainer. The evolution of the old "bushel" basket as a receptacle for the better grade of potatoes to its present status as a container for high grade fruit is due, largely, to the persistence of the Package Sales Corporation, an organization that has advocated its use in and out of season. In fact, much of the data used in connection with the following article was secured from this source and we are presenting this story to our readers because the use of the basket as an apple container in the Far West is rapidly increasing.

AS LIVING conditions have changed so have the desires of the fruit buying public, not only for better fruit but also for smaller containers. Where formerly apples were only sold in large containers, such as the barrel, they can now be purchased in smaller ones which are far more suited to the needs of the average family. The bushel basket has been found to fill the wants of the consumer because it is not too large or too small. It also gives the buyer a better chance to see what he is getting because of the wide display surface permissible in this style of container. The grower who is proud of his fruit has a splendid opportunity of showing it to the buyer when in baskets.

It can be truthfully stated that the buying public is developing a desire not only for a smaller container, but also for containers with good arrangement and proper grading of the contents. There has been a vast improvement in grading and packing in the last few years, but there is still room for bettering existing conditions. It is a trade axiom that the better the "look" the quicker the "sale," and every enterprising grower realizes this statement to be the truth.

THE round stave bushel basket has a capacity of 2150.42 cubic inches or 32 quarts dry measure. The web is composed of 20 staves, 36 inches long and of varying thickness, according to the density of the wood used. This web is so constructed as to form a basket having a height of 11¼ inches, a bottom diameter approximately 14 inches and an inside top diameter of 17 inches. The staves are securely stapled to the top and center hoops. All staples should be driven through both top hoops and well clinched on the inside. The handles should also be driven through both top hoops, the ends bent upward and against the inside hoop. They must be exactly opposite each other.

In order that the contents of the baskets may arrive on the market in perfect condition it is necessary that the basket be made of sound material, of tight construction and good workmanship. It has been proven to the sorrow of a great many growers that by using weak or poorly constructed baskets the contents have arrived on the market in bad condition and in many instances have failed to arrive at all. It is imperative that well made baskets be used if satisfactory results are to be obtained.

IN MANY small orchards apples are packed in the orchard. This, however, is not true of most of the large commercial sections where regular packing houses have been built. The fruit, after picking, is brought to these houses and graded and sized. Grading consists of removing fruit that is wormy, scabby, misshapen, dirty and otherwise injured so as to render it unfit for high grade packing.

Sizing refers to the operation, either mechanically or by hand, of sorting apples into different sizes according to their transverse diameters. A number of mechanical sizers are on the market and used extensively by commercial fruit growers. A few of the best known graders are the Prescott, Starcher, Cutler, Pease and Burke. After the culls have been removed the fruit can be sized into the different grade sizes.

Where apples are packed on what is known as "Orchard Run" basis the work is usually done in the orchard. In this case no sizing is done except to remove the very small apples. The only grading is the removal of wormy, scabby and decayed fruit, which is usually accomplished as the fruit is picked. The baskets are, of course, jumble packed with a smoothing or semi-ringing of the face before the cover is put on.

THERE are two methods of packing apples in basket packages, the jumble and ring pack. The jumble pack consists merely of putting apples into baskets in a haphazard way with no attempt at arrangement. Some growers put a face on a jumble pack, while others leave the apples in whatever position they happen to be after being put into the basket. This latter method should be discouraged in most cases. In the ring pack the fruit is placed in concentric circles, beginning at the bottom of the basket and extending to the top.

Facing is the arrangement of the fruit on the top of the basket after it has been partly filled. It is this factor alone that determines the appearance or "looks" of the basket. Looks goes a long way in in-

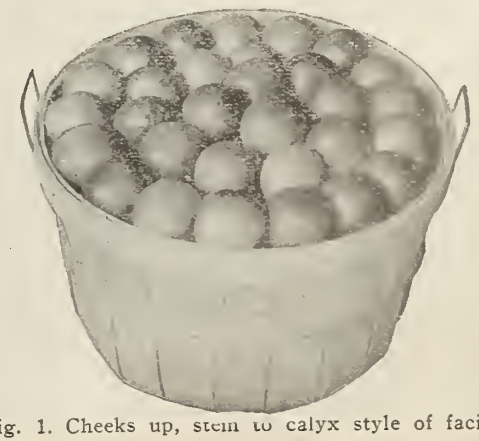


Fig. 1. Cheeks up, stem to calyx style of facing

creasing the sale value of the package, which emphasizes the fact that all baskets should be ring faced. In order to receive top prices baskets should present a very at-

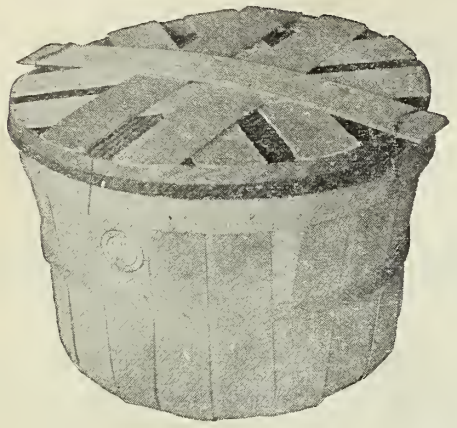


Fig. 2. Packed basket, showing wire side hooks and 19-inch pad

tractive appearance. This can only be accomplished by facing.

The styles of facing most commonly used are:

1. Stems up, fruit in concentric circles.
2. Cheek up, stems out to edge of basket, fruit in concentric circles.
3. Cheek up, stems to calyx, fruit in concentric circles.

IN the jumble pack the apples, after having been graded and sized, are run into baskets without bruising. Care should be used in this operation, for apples falling but a few inches will bruise and while the bruise may not be apparent, in a few days it can be noticed and at a later date offer chance for deterioration. It is preferable to pack graded and sized apples rather than orchard run. Only sized apples and one size at that should go into the basket. It is bad, and in some cases an unlawful practice to mix sizes. As the basket fills with apples it should be smoothed around so as to fill up all depressions and secure a tight pack. When the basket is half full a "follower" or "racker" should be used. This covers the fruit and in racking it prevents the apples from bouncing around and being bruised. When the basket is filled to within two or three inches of the top the "follower" should be again used and the basket well racked. This prepares a good foundation for the face if one is to be put on.

It is very important that a bushel of jumble packed apples be well racked. Racking consists of a sharp shake from side to side with the object of settling the apples in place. It should be done on a solid foundation, such as a plank or the floor of the packing house, as it can never be done successfully on the ground. Racking should be done with a slight, sharp jar, rather than a swinging, throwing motion. Unless the baskets are racked properly the fruit will not be settled and the baskets will have the look of a slack pack when the basket arrives on the market. It is absolutely necessary in good, jumble packing that the baskets be well racked.

RING packing a basket is considered by some growers to be the best method. Undoubtedly for extra fancy fruit and for the larger sizes as well as for apples that will be put into cold storage ring packing is to be preferred. Do not confuse ring packing with ring facing, as a jumble pack and the ring pack are both faced. Ring packing is the placing of the fruit in the basket in concentric circles. Start at the bottom and against the sides and pack the fruit in rings. It is preferable to pack the fruit stem to calyx in making the rings and after the first ring has been completed put in the second ring and continue until the entire layer has been finished. The second layer is put directly on top of the first layer and so on until the basket has been packed and is ready for the facing on top.

In both the jumble and the ring pack the fruit in the center of the basket will be higher than the fruit around the side of the basket. This is caused by the center of the bottom being raised. This raised center causes an increased height of bulge in the center of the face and is one of the very strong points about the packing of apples in bushel baskets. It gives a bulge without using a larger sized apple for the center.

The ring packed basket holds very tight in transit, and it is not necessary to rack it unless fruit of uneven size has been used in making the layers. It should not be packed so high that there will be too great a bulge above the edge of the outside hoop when the facing is put on.

THE fruit selected for the facing of the baskets should be such as to fairly represent the quality of the contents. If the apples are not graded to size it will be unfair and unlawful to have the larger size in the face. It will also be unfair to have apples of better color on the face than those in the rest of the basket. In short the face must represent a fair and uniform sample of the fruit in the baskets. The fruit in the face should be placed to the best advantage. To obtain a good looking face the fruit must be uniform in size.

The Styles of Facing

1. Stems Up, Fruit in Concentric Circles. This face is very popular and is no doubt used as it is similar to the facing of a barrel pack. This style does not permit the tightest face or provide the greatest possibility of showing the maximum color of the apples. This style of face is not so popular with the growers as that of cheeks up. Where the basket has been ring packed from the bottom up this face is easy to put on.

2. Cheeks Up, Stems Out to Edge of Basket, Fruit in Concentric Circles. This face is the least popular of the three methods of facing does not permit as tight a pack and besides it requires more time in preparation than the other styles.

3. Cheeks Up, Stem to Calyx, Fruit in Concentric Circles. This face (Figure 1) is no doubt preferred to all other styles. It allows the greatest possible display of the well colored cheeks, it makes an even, smooth, tight pack and prevents slipping or displacement of the rings. This style of face can be put on in much less time than other styles.

IN SIZING fruit for bushel baskets the size is the transverse diameter rather than the longitudinal diameter. This is measured by a line through the thickest part of the apple, which is at right angles to a line drawn from stem to calyx. The average transverse size of the apple is considered in this work and not the longitudinal diameter.

Five sizes of apples are listed below and for the convenience in this bulletin the different sizes have been numbered. They are:

I. ..... 2 in. to 2¼ in.
II. ..... 2¼ in. to 2½ in.
III. ..... 2½ in. to 3 in.
IV. ..... 3 in. to 4 in.
V. ..... 4 in and above

Due to the variation in the size of the different classes mentioned the number of apples in the different rings of the face will vary slightly. It would be ideal to ring face with apples that were half way between the minimum and maximum of each size. This, however, is not possible unless a hand sizing board is used or the grader is so equipped that it sizes accurately to the transverse diameter of the size being packed.

In the experimental work on which this data is based the variety used was Ben Davis. The general shape and conformation of this variety is similar to most varieties except those shaped like a Delicious, the York and other off-shapen varieties. The figures obtained are for sizes of apples which were run through the Starcher grader, frequently called the Virginia Fruit Sizer.

THESE figures are only approximate for the different sizes, and no figures can be exact because of the variation in the

Fig. 3. Showing wrapping of fruit except center rows to show prospective purchaser quality of fruit. Also label on top of basket

commercial sizes being packed. The variation in some sizes will be from a quarter

(*Continued on page* 15)

Commercial Possibilities of the Chestnut

By Knight Pearcy, Horticulturist

The chestnut, while not of the high grade of some of the other American grown nuts, finds a ready and profitable sale, particularly on the fruit stands in many of the larger cities in the East. Of late years it has been found that it is being attacked by a pest that is greatly lessening its yield except on the Pacific Coast. The possibilities of its propagation in the latter region therefore are of wide importance and are pointed out in the following article by Mr. Pearcy.—Editor.

THE chestnut, at the present time, is one of minor importance as a commercial product of the Northwest. There are but very few commercial plantings and those are small in extent. The behavior of the trees in these few small plantings, together with the performance of the many trees planted all over this section as shade and ornamental trees have demonstrated that our climate conditions are suitable for chestnut culture. An analysis of conditions in the eastern chestnut growing regions should be made before we decide whether we are warranted in making commercial plantings here.

Twenty years ago great chestnut forests were growing in the eastern part of this country. Today these forests are disappearing, apparently doomed to extinction and that quickly, too. In 1904 it first was noticed that many of the trees in the vicinity of New York City were dying of some strange disease. Investigation by pathologists demonstrated that the disease was caused by a fungus, Endothia parasitica by name. It spread rapidly all through the native chestnut area and by 1916 was found in 13 states, and had caused damage estimated at $50,000,000, half the total valuation of the American chestnut forests. At the rate that it is eating into the forests the American chestnut will soon be wiped out of its native home.

With most diseases of this nature there always appears some immune trees in the forests or the orchards from which may be bred resistant strains of trees, but no American sweet chestnut tree has yet been found that shows any degree of resistance.

IT HAS been discovered that this fungus has its home in China, Japan and Korea and that it was evidently transported to America on imported nursery stock. The fungus spreads by means of birds, insects, wind, rain and by shipment of nursery stock, chestnuts and chestnut timber on which the bark is permitted to remain. It causes death by penetrating the bark and attacking the cambium and sap wood areas. This disease is deadly both to American and European varities. It is spreading rapidly, 99 per cent of the trees in Eastern Pennsylvania already have been killed according to reports. None of our American and European varities are inmune, although certain nurseries have claimed the Paragon to be so. The disease is practically uncontrollable, although where one has but few trees he can keep it in check by cutting.

An embargo is needed to protect the uninfected western district. The disease cannot be detected on nursery trees. We should not import chestnut trees of any kind from any of the blight districts of the East, which means from any of the native chestnut area.

The Japanese and the Chinese chestnut species are attacked by this fungus, but the injury seems comparatively light since these species in their agelong struggle with the blight have developed resistant strains. The hope of eastern United States to remain a chestnut producing section seems to be in discovering some Japanese or Chinese variety or a hybrid that is blight proof and which at the same time has other qualities which are desirable. Dr. Van Fleet, of the United States Department of Agriculture, has developed a number of hybrids between the Japanese chestnut and our native chinquapin, which hold considerable promise to the eastern growers.

THE chestnuts of the world are of several species. The American chestnut, known to botanists as Castanea dentata, is a tall straight tree, when grown in forests and produces nuts of the highest quality, although smaller than those of most other species. There are comparativly few named varieties of this species, the Rochester being perhaps the leading variety.

The European species is known to science as C. sativa. Its tree is smaller than that of the American species, but its nuts are larger, although of poorer quality. Blight resistance is greater than that of the native chestnut, but not enough to permit it to survive when planted in a diseased section. There are many varieties of this species, although most of these are varieties that originated in this country from seedlings of the European species.

Named varieties imported directly from Europe have not succeeded as well in Eastern United States as have the varieties originating on this side of the water, although it is claimed that many of these named French varieties, when grown on the Pacific Coast do exceptionally well. This we would expect in keeping with the well known horticultural law that plants imported from the Asiatic Coast countries do better in eastern America than on the Pacific Coast while plants from the western Europe succeed better out here than in eastern America. Numbo and Paragon are two of the most popular named varieties of European chestnuts growing in the East.

THE Japanese chestnut, C. crenata, is highly resistant to blight, has a very large nut, although its quality is so low that it usually has to be cooked to be palatable, is precocious, a prolific bearer and produces an earlier maturing nut than does either of the above mentioned species. The tree itself is semi-dwarf. It seems to have everything but quality of nut to make it a desirable nut producing species and plant breeders feel that they can improve the quality of the nut and are now working upon this problem. Alpha, Beta, Parry, Coe, Boone and Giant are varieties of this species.

The Chinese chestnut, C. molissima, is a relative stranger in this country and we know less about it than the others. It makes a taller tree than the Japanese and produces nuts of good quality.

We have not experimented with the chestnut enough in the Northwest to be able to say just what soils are best, but it appears to do well on most of our fruit soils where drainage is good.

Spacing of 40 to 45 feet seems to be about the need of the American and European varieties, while the Japanese tree will do with a 30-foot spacing. General culture is about that of the apple orchard. Little is known regarding pollinization, but the general advise is to plant several varieties. The Japanese varieties are apparently self fertile.

One grower in the Middle West reports the following yields from a Boone seedling tree Eight pounds the sixth year; 26 pounds the ninth year; 50 pounds the 12th year; 80 pounds the 15th year, and 140 pounds the 17th year. He received 25 to 40 cents per pound in the Chicago market that year.

One grower near Salem with 20 crowded trees, all seedlings, harvested an average of 50 pounds per tree from trees in their twenties. One tree yielded 100 pounds. We have records of other Oregon trees that have borne as high as 150 pounds of nuts, and of a number that have averaged 50 pounds per tree for years, which would give 1,200 to 1,500 pounds per acre.

Most of our nuts are high in fat content and fairly high in protein content. The chestnut, however, is lo win fats, but very high in carbohydrates. Its composition and food value is very close when analyzed to that of corn meal or of wheat bread. Many of the Europeans use it much as we use the potato, to supply the starches in their diets. They use this nut boiled, roasted, made into cakes and in many other forms. It enters into their diet very extensively. They also use it for feeding hogs as do the Japanese. It has a high feeding value and acre for acre will produce more

fattening value for hogs than will a 25-bushel yield of wheat. A few chestnut trees planted on waste land would in a few years serve to fatten the hogs for the winter's supply of pork for a farmer, thus releasing more valuable land now used for raising hog feed.

AS to the future of the chestnut in America: The native forests of the East are doomed. Any chestnut industry that may be maintained in the present American chestnut regions will have to be based on resistant hybrids that are now being tried out. Parts of the Middle West are planting a few chestnut orchards and these sections many develop plantings to supply the market of the East in case they can keep the blight out. The Pacific Coast is the only remaining section that may step into the breach. This section has the climatic conditions necessary to success and is fortunate in not having any native chestnut forests, hence will have less trouble with diseases and insects than will an old growing region. We know we can grow the nuts commercially. Our question is simply this: Is the eastern market attractive enough to warrant our growers, who can do so well with filberts and walnuts and with so many fruits and berries, to plant chestnuts instead of other nuts and fruits?

Pomologists to Meet

THE thirty-eighth convention of the American Pomological Society will be held this year in Toledo, Ohio, December 7, 8, 9. The meeting will be in conjunction with the National Farmers' Exposition annually held in that city. A considerable exhibit of fruits and by-products will be staged in connection.

The American Pomological Society, founded in 1848, is one of the oldest agricultural institutions in the country. It has had a long and successful history and has been of large service to the fruit industry throughout its life. Its membership is found in the United States, Canada and a number of other foreign countries.

R. B. CRUICKSHANK,
Secretary-Treasurer

Another Friend

Kennewick, Wash., Aug. 24, 1921.
Better Fruit,
Portland, Oregon.

Enclosed find money order for $1.00 for a year's renewal to Better Fruit. Wish to say that there isn't any reading matter that enters my house that I take as much interest in as I do Better Fruit. Keep the good work up, for we are with you as long as we are in the fruit game.

Yours truly,
J. W. TYSON.

Picking for Flavor and Keeping Quality

By F. W. Allen, Assistant Professor of Pomology, University of California, Berkeley, California

Continued from the September Number

IN the storage work which the U. S. Department of Agriculture has been conducting in the Northwest for a number of years, the effect of maturity at the time of picking in relation to these troubles has been studied. For comparison two pickings of fruit were made from the same trees ten to twenty days apart. The first, or "immature," picking was made at the beginning of the commercial picking season for the variety. The second, or "mature," picking was made twenty days after the first, usually a few days later than the last commercial pick. These lots, comparable in all other respects, were stored immediately at a temperature of between 31 to 32 degrees F. Carful inspections were made four times during the winter, beginning about the first of January and continued at intervals approximately six weeks apart. One-fourth of each lot was taken out of storage at each withdrawal, inspected, and held in an ordinary warehouse room ten days. The fruit was then inspected again and discarded. The temperature of the holding room was usually between 50 to 60 degrees F. Some of the data obtained on apple scald with Rome Beauty and Winesap, published in Department Bulletin 587, are as follows:

The work carried on as related to Jonathan spot shows a very close relation between maturity and the percentage of fruit affected. With some twenty lots where the fruit was picked at different stages of maturity those of late pickings developed from three to six times as much spot as those of the earlier pickings. These results are in accordance with the general opinion and observation of growers.

Condition	1st Withdrawal Jan. 8 to 12		2nd Withdrawal Feb. 16 to 19		3rd Withdrawal Mar. 31 to Apr. 2		4th Withdrawal May 4 to 11	
	Mature	Immature	Mature	Immature	Mature	Immature	Mature	Immature
ROME BEAUTY (Four-year Average)								
Bad Scald:								
At withdrawal.....0	0	0	20.5	1.0	48.9	3.5	58.9	
10 days later.....1.7	49.9	5.4	70.5	10.4	81.5	17.8	81.6	
Decay:								
At withdrawal.....0	.1	0	0	0	.2	.1	.4	
10 days later..... .2	.6	.2	0	1.6	9.8	2.7	18.0	
WINESAP (Three-year Average)								
Bad Scald:								
At withdrawal.....0	0.1	0	7.6	0	15.5	0.6	15.5	
10 days later.....0	9.6	.2	13.9	3.3	25.7	11.3	33.5	
Decay:								
At withdrawal.....0	0	.3	.3	.5	.3	.5	.6	
10 days later..... .1	.1	.3	.3	.8	.5	.7	.7	

FROM this data it is seen that these varieties are attacked much more quickly and seriously when picked prematurely than when picked at full maturity. The most practical remedy for this trouble then is picking at proper maturity, as no other factor has such an important bearing on the amount of scald which develops in storage.

Data obtained during the seasons of 1918 and 1919, while the writer was in charge of these investigations, show that with Stayman Winesap the percentages of scald on the first and second pickings of fruit were similar to those given above, while in the case of a third picking made ten days after the second and twenty days after the first, the percentage of scald was negligible. It is thought probable that the cells which make up the skin of the immature fruit are weak and undeveloped and therefore break down quickly in storage. This may also explain the physiological decay which often follows severe scald.

WHILE it may be stated that additional flavor or dessert quality might be gained by later pickings of some varieties, yet in so doing some of the earlier sorts would pass their best eating conditions very quickly and their season would be limited to a much shorter period than it should be. Later varieties cannot be left unpicked much later than is usually customary on account of the danger of freezing. Even when actual freezing temperature is not a factor, delayed picking—in some cases delayed for size—often results in a high percentage of water-core. This condition is most often seen in the Winesap.

It would seem, therefore, very difficult to lay down any hard and fast rules relative to the time of picking which would hold good in all cases. From data thus far obtained Jonathans have shown less Jonathan spot when picked comparatively early. Stayman Winesaps and Grimes Golden gave a much smaller percentage of scald when allowed to become more mature. Each grower must, therefore, consider his varieties and the probable time they are to be held before reaching the market. Most varieties should be of normal size, and in red-skinned sorts they should be of good color. The flesh, however, should be quite firm, or "hard ripe." Green varieties should have the green color changing somewhat to a whitish or cream tinge. There is no doubt but that the proper time for picking a variety is comparatively short, and after harvest is once started it should not be delayed.

TO avoid lice and other vermin keep your hen house light and dry. The greatest preventive of both vermin and disease is sunlight. You will do well therefore to provide plenty of sunlight and dust baths. A good insect powder added to the dirt in the dust bath will prove an added protection against lice and mites.

The Advantages of Central Packing Plants

By John H. Watling, Monitor, Washington

The central co-operative apple packing plant is becoming recognized as a great aid in handling the crops in communities where the yields on individual ranches are small. In handling the outputs of the ranchers in one of these plants equipped with the latest appliances it can be done rapidly and cheaply with a comparatively small investment to its patrons. It is this feature that is taken up in a colloquial way in this article and worked out to an interesting conclusion.—Editor.

"HOW are you to pack your apples this fall, Brown?" I asked a neighbor of mine the other day.

"As usual, I suppose; do it at home by a crew," was the answer. "I'm not well prepared for it, either. I need a larger packing shed and I could use a storage cellar, but the cost of building is so high just now that I must get along with what equipment I have."

"What do you think of sending your fruit to the new central packing plant?" I asked.

"I haven't given it much thought," replied Brown; "it's a new idea in this country, and I'm not sure it will appeal to the growers. What do you think of it?"

"I believe it will solve the packing problem for a large number of orchardists," I replied. "In the first place most growers have but small orchards ranging in size from five to ten acres. For each owner to build a suitable packing and storage plant with the most necessary mechanical equipment, even if he does not install graders, conveyors, elevators and so on, would require a large sum of money. Whereas, if a central packing plant were patronized it would render a plant on each tract unnecessary."

"That's quite true," said Brown; "it would conserve building and equipment. The latest labor-saving devices could be installed and the entire cost would be but a fraction of the cost of building a number of individual plants."

"Then, too," said I, "a plant patronized by a large number of growers would continue in operation all fall and winter. This means that the geratest amount of service would be yielded by the investment. In the orchard the packing plant is in use one or two months of the year at most. The rest of the time it stands idle, as it is seldom used for anything else, and earns nothing."

"I can see that," said Brown. "I also believe that the fruit would be put on the market in better order. That is, the early varieties would be packed, shipped and on the market before the warehouses became congested with the later apples. In fact, one variety of apples throughout the community might be packed and shipped before another kind were packed. This, of course, would be of much benefit to the buyer."

"I believe," said I, "that the condition of the apples would be much better if they were packed in a central plant, for a precooling room would be provided. On no orchard have I seen such a place. The low temperature of this place, where the apples would be put to cool upon delivery, would stop the ripening process and check the consequent breaking down of the fruit cells, and thus keep the fruit in the best condition for either storage or market."

"There is something to that," Brown replied. "The fruit could be hauled direct from the orchard to the plant. On many a tract the apples stand exposed to the hot sun or in a warm shed for days before being packed. This treatment sometimes ripens the fruit to such a degree that it cannot be stored but must be rushed to market regardless of the demand for the variety.

"One advantage of the hauling right from the orchard," said I, "is that the fruit would be handled at home but once. If the fruit is packed at home it must be unloaded, carried to one side, sorted, again and placed aside, packed, stamped, and lidded, and again set aside before it is loaded on the wagon or truck and taken to the warehouse. All this handling must generally be done by hand. At the warehouse, fruit must pass inspection. If fault is found with quality or pack, the fruit must be taken back home and re-sorted and packed. All this labor and annoyance would be avoided by patronizing a central plant.

"Packing at a central plant would help standardize the grades," I continued, "the fruit of all the growers would be packed quite uniformly. At home, although the same definite directions are given by the buyers to each grower, differences in quality and color exist."

"I believe one important advantage to the plan is that the grower could concentrate on the picking," said Brown, and probably do much of it himself. He could at least see that his fruit was picked with proper regard to color and without being bruised."

"That's true," I replied, "one's harvesting crew could be greatly reduced and the picking could be finished at an early date. That's a rather important advantage should an early winter set in. It would lessen the danger of losing apples by sudden frosts."

"Not having packers, sorters and the necessary handy man would greatly lighten the work in the household," said Brown. "My wife is not very well this fall and dreads the ordeal of cooking for so many hands. I wish it could be avoided. Then too, we feel obliged to serve the crew heavier and more elaborate meals than we would need for ourselves."

"In many instances," said I, "growers are ill equippted to house and board extra help, and it is often difficult for the growers with a small crop to hire competent packers."

"I realize," said Brown, "that a central plant would attract the most skilled workers because of the long season and the high wages made possible by the labor-saving mechanical equipment.

"In fact," he concluded, "I believe that, in spite of prejudice, and some pratical difficulties, the time may soon come when a large percentage of the apples grown in the Northwest will be packed in central plants. I believe I'll try it."

Melons should be cut with as long stems as possible when harvested, and they should be loaded within a few hours after cutting. Before loading, the car should be thoroughly cleaned and provided with bedding of dry straw.

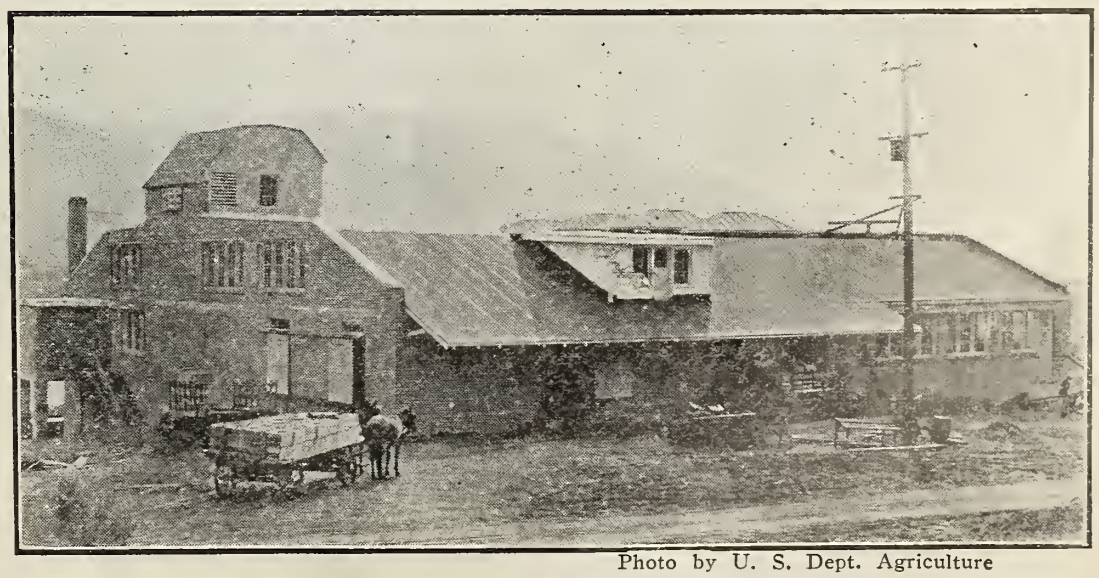


Photo by U. S. Dept. Agriculture

Fig. 1. A well constructed community apple packing house

A Thrips Injury to Apples

By E. J. Newcomer, U. S. Bureau of Entomology, Yakima, Washington

IN 1914, when I was first stationed in the Pacific Northwest, my attention was called to certain irregular whitish spots that were quite prevalent on apples. Since then I have seen these spots on almost all varieties of apples wherever they are grown in the Northwest. The spots are frequently very common, sometimes as many as twenty-five or thirty occurring on a single apple. These "pansy spots," as they are sometimes called, invariably show a dark center, or puncture, and are quite obviously caused by an insect. While in most cases the spots practically disappear before the fruit is mature, in certain varieties they persist, and cause the fruit affected to be lowered in grade. In any event, they are the cause of much inquiry on the part of apple growers as to their origin and economic importance.

Effect of Thrips on Half-Grown York Imperial

The spots are present on the apples very soon after blooming, and during June and July are usually rather conspicuous. (Fig. 1). As the fruit grows, the white area spreads out somewhat, and on most varieties gradually assumes practically the color of the rest of the surface, until at picking time it has very largely disappeared, only the small and inconspicuous puncture remaining. This looks very much like a lenticel and in no way affects the grade. On some varieties, notably the McIntosh (Fig. 2), the York Imperial and the Northern Spy, the spot shows very conspicuously at maturity and sometimes as much as 25 per cent of the crop is injured in this manner, with a consequent reduction in grade.

For the last seven years I have attempted to find the cause of this spot, but with no success until this year. The spots were evidently produced at about the blossoming time of the apple, but did not become noticeable until after the calyx cups had closed, by which time the insect that caused them had apparently disappeared. I have been able to prove that these spots are not produced by any of our apple-feeding aphides, nor by the tarnished plant bug, and Mr. Childs, of the Hood River Experiment Station, has shown that they are not the work of the leaf hoppers, though the idea is still quite prevalent that leaf hoppers are the cause of these spots.

In 1920, Mr. B. B. Fulton, of the Oregon Experiment Station found what he took to be a thrips egg shell in one of the punctures, and in May, 1921, I began examining apples shortly after the blooming period. I found newly-hatched thrips larvae very common in the calyx cups. One lot of 100 apples harbored 89 of these thrips larvae. By rubbing off the pubescence of these small apples, I was able to find the whitish spots already present, and after a careful examination of a considerable number with a binocular microscope, I was able to find some which contained a thrips egg in the center of each spot. The egg is very small, less than a half millimeter in length, white, and very delicate. After being exposed to the air a few moments, it begins to shrivel. The egg is deposited at nearly right angles with the surface of the apple, and just beneath it, one end of the egg closing the hole made by the thrips ovipositor. The larva, upon hatching, emerges through this outer end, and leaves a small hole in the skin of the apple. The irregular, whitish area is the result of irritation produced by the presence of the egg in the apple. This settles the question of what causes these white spots or areas. The matter of preventing them is yet to be considered.

In most of our commercial varieties this thrips injury is of no consequence. It is inconspicuous at picking time on such varieties as Winesap, Newtown, Rome and usually Jonathan. In such cases, control measures are unnecessary. Where the McIntosh, Senator, York or Northern Spy is grown, however, it might sometimes be advisable to use preventive measures. The species of thrips causing this injury has not been determined. However, the damage is done during a comparatively short period, and the application of a standard thrips spray of miscible or distillate oil and nicotine sulphate at the time of the "pink" spray should materially reduce the injury.

Thrips Injury to Mature McIntosh Red

Collar Rot

By Luke Powell, Horticulturist, Yakima, Washington

THE fruit grower little realizes the heavy loss he is sustaining year after year from the so-called collar rot. If the owner of the average ten-acre orchard was to lose three cows or horses per year, valued at $100 each, he would soon realize that he must find the causes and remedies for the losses or quit raising cows and horses.

The average fruit grower does not realize that every time a good fruit tree dies it means a loss of at least $100 to him. This is due to the fact that it takes the tree about a year or two to die and usually before one is dead several more have started and so the grower gets calloused to his losses. Nor does he further know that as the trees get older they are more susceptible to the disease, although they are increasing in valu.

In reality there is no such diseases known as collar rot. But due to the fact that the trees are most usually affected below the surface first and die when the infection has about spread to all the roots and girdled the tree at the surface of the soil, it is commonly called collar rot.

We have here in the Yakima valley several different types of this root injury which, if not promptly checked, soon kills the tree.

On some slopes with good soil and splendid drainage we are losing trees during the summer or irrigation season.

In other localities the injury is done later on as the fall and early winter sets in, or it may be delayed until spring, depending on the factors that cause the trouble.

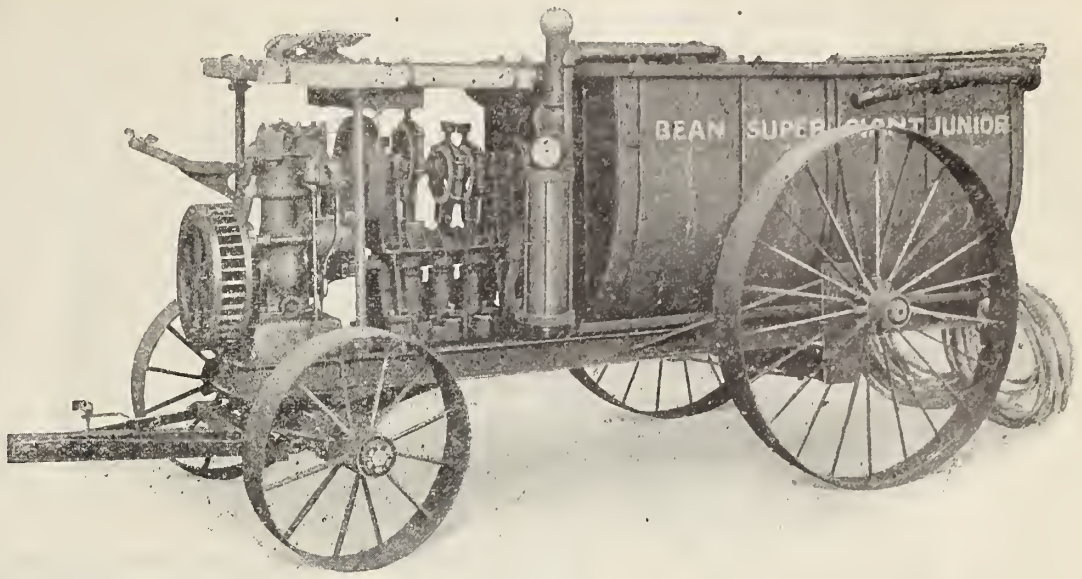
We have some few cases of real pear or fire blight attacking the roots and trunks of the trees. This is easy to control compared to the other cases.

There are three factors that enter into the control of this so-called collar rot.

First: The grower must fully realize the economical loss he is sustaining from year to year.

Second: That he is going to find out the factors that causes it in his orchard and how to prevent its further occurrence.

Third: That in the future he will plant only such nursery stock as is as near immune to these troubles as it is possible to grow.



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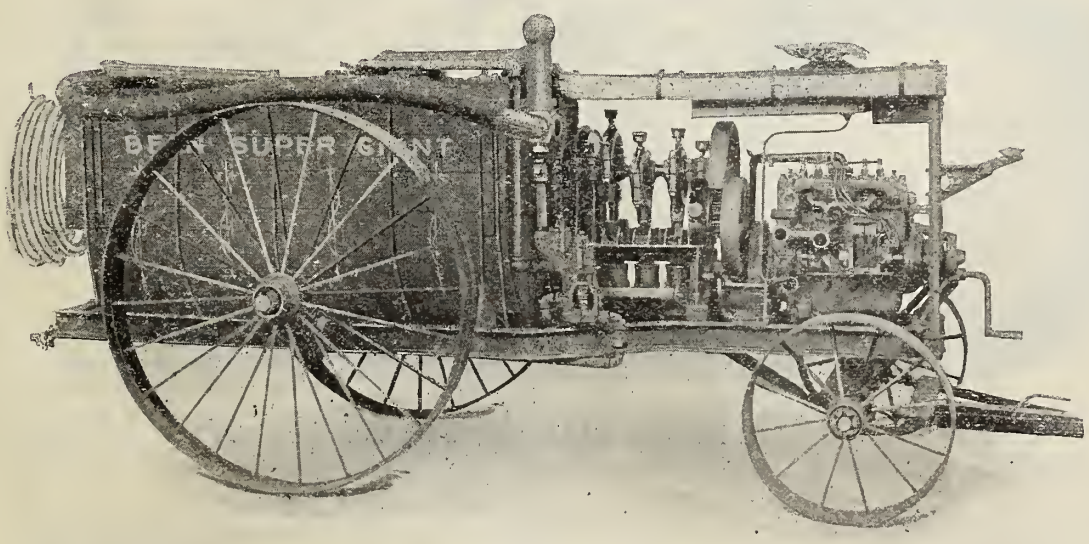

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The Care and Culture of Vineyards

By Daniel Prowant, a Successful Grower

WHILE grapes seem to prefer a rather high location, and one that will surface drain readily, they may be successfully grown on almost any soil that can be drained properly by means of tile. They do not require a soil as high in fertility as some of the other fruit crops, but they will repay good care. Cultivation must be frequent enough to keep out all weeds and grass, and to keep the soil loose enough to prevent the escape of moisture in dry weather. They are usually a fairly profitable crop, and in some sections of the country where the land is so broken as to make general farming difficult they are the most profitable crop that can be grown.

Our own vineyard is set in rows six feet wide, the vines six feet apart in the rows. Cedar fence posts are placed in the rows twenty feet apart, and wires are stretched for them to vine on. The wires should not be stapled to the posts, as the weight of the vines will pull out the staples, and make an unsatisfactory job. The best plan is to bore one-half inch holes entirely through the posts, and pass the wires through the holes. The end posts must either be securely braced or set in concrete to prevent the wires from sagging. Three wires for each row is sufficient, but they should be pretty heavy, as they may be broken when laden with fruit, and should be stretched as tight as possible. This method is quite satisfactory in every way except that it will only permit cultivating in one direction.

ANOTHER plan of growing that I have seen in use that will permit cultivating in both directions, is to set three small posts, preferably steel posts, in the form of a triangle, with the vine in the center. Three or four wires are stretched around this triangle to support the vine growth. The only objection to this plan is that the grapes are a little more difficult to get at by the pickers.

With us grapes are not bothered to any extent by insect pests, but such fungus diseases as rust, rot and mildew are more or less common. This can be taken care of by spraying at regular intervals with some good fungicide. Bordeaux mixture is used with good results for this purpose, or a combined insecticide and fungicide may be used if there is need for it. Insecticides should not be used after the fruit has set, as almost all of them are poisonous to mankind as well as to insects.

Pruning the vines should take place once annually, and the work must be done while the vines are dormant. We prefer to do this while the weather is quite cold, as the vines often lose much sap if pruned when not frozen. There is more danger of the average grower not pruning enough than there is of pruning too much. All of last year's growth should be cut away except two buds on each branch of the vine, and not more than three or four branches allowed to remain. This looks like making a slaughter of the vineyard at the time, it is true, but as the grapes are always produced on new vine growth the fruit will be much larger if the roots are not compelled to support too large a growth of vines.

Sometimes when the grapes set very heavily it will be necessary to thin out some of the bunches if the finest grapes are wanted. If too many are allowed to remain the grapes will all be small and of inferior quality. The best time to do this is when the grapes are a little less than half grown, and the worker will have to be governed largely by conditions and use his own judgment regarding how far to go with the thinning.

When the grapes are to be thinned or gathered a sharp knife or a small pair of shears should be used to cut off the bunches. They should not in any case be broken off as the vine is apt to be torn, and this does it more damage at this time than might be supposed. Grapes are usually marketed in one-half or one bushel baskets, and should be handled with care by the pickers and haulers to avoid crushing. If the grapes are to be shipped to a distant market it is better not to allow them to get too ripe, as they are apt to be badly crushed in transit, and reach the consumer in poor condition.

Preserving Sweet Cider

SWEET cider or grape juice can be preserved in a sweet condition indefinitely if the directions furnished by specialists in the Bureau of Plant Industry, United States Department of Agriculture, are carefully followed.

As rapidly as the juices are pressed from the fruit place them in clean vessels. Wooden barrels or tubs which have previously been thoroughly scalded will serve the purpose very well, although earthenware jars, if available, should be used. These are allowed to stand over night, or for not more than 12 to 14 hours, in the coolest location possible so that much of the solid matter suspended in the juice will settle to the bottom. Glass jars or bottles must be thoroughly sterilized to receive the juices, which are drained off without disturbing the sediment.

If fruit jars are used they should be fitted with sterilized caps and rubbers, and the cap tightened down as far as it can be turned. If bottles using crown caps are used, the bottles are capped as they are filled, using caps which have been sterilized. In case bottles closed with corks are used, set the previously sterilized corks in place in the bottles and tie them down loosely with a strong cord so that steam may escape. To relieve the pressure during sterilization the bottles should be filled only to the neck.

A WASH boiler or other convenient vessel can be prepared for a "water bath" by fitting it with a wooden rack on which the containers filled as above indicated with juice are placed. The bath is filled with cold water and the bottles or jars, if closed,

are inverted or laid on one side so as to wet the inside of the caps thoroughly with juice. If bottles closed with corks are used, the bottles must stand upright in the water, which should come up to the necks of the bottles.

The heating is then started. A thermometer is hung so that it will dip for half its length into the water, which is heated gradually until its temperature reaches 175 degrees F. Allow the bottles or jars to remain in the water for 30 minutes if quart or half-gallon jars are used, and from 40 to 45 minutes if gallon bottles are used. Then remove from the stove and immediately tighten down the caps of the jars, if jars are used. If corked bottles are used, drive the corks firmly into the necks; invert each bottle so as to wet the cork thoroughly with the hot juice; then complete the sealing by cutting the corks off smoothly ad pouring hot paraffin over it.

Place the product in a dark, cool storage room. Watch it for a period of a week or more for the beginning of fermentation, which will be indicated by frothing at the surface of the liquid. If any bottles show signs of fermenting, return them to the wash boiler and repeat the process exactly as before, loosening the tops, of course, before heating begins, and closing down firmly again before the liquid is allowed to cool.

WHEN the juice is placed in storage the suspended solid matter will gradually settle out and sediment will accumulate in the bottom and on the sides of the jars. In the course of two or three months at ordinary temperatures, this settling will be completed and the liquid will be fairly clear. It may be used directly from the bottles or drawn off into clean bottles, which should be sterilized before they are filled and which should then be corked and pasteurized by heating to 170 degrees F. for the same length of time as in the first pasteurization. If rebottling is necessary or desirable the second heating should never reach the temperature to which the juice was first heated; otherwise, the clarification which is secured by settling and decanting into new containers will be defeated, as a second process of sedimentation will occur. If the temperature be kept 5 degrees below that reached at the first heating, this result will be avoided.

A reliable thermometer is a necessity for this work, as it is important that the juice be heated to 175 degrees F. in the first heating, in order to destroy the organisms which would otherwise cause fermentation. It is equally important that the juice should not be overheated, as this will give it a cooked taste which is decidedly unpleasant to many people.

A survey of the dried and canned fruit business in Scandinavian countries finds American canned and dried fruits easily in first place and enjoying continued popularity, reports the American agricultural trade commissioner at London.

Applying Oil Spray

By Leroy Childs, Entomologist, Hood River Experiment Station

THE oil spray is a difficult one to apply owing to the fact that all parts of the trees must be thoroughly covered if good control of the leaf roller is to be obtained. In order to get the best results there are a few points that growers should continually keep in mind while the spray is being applied. These are:

Apply the spray during warm settled weather as far as it is possible to do so.

The eggs of the leaf roller are deposited on the twigs and branches in all parts of the trees, for the most part on the upper sides of the limbs and twigs. On this account all parts of the trees must be thoroughly covered.

It is important to hit every egg mass. From 25 to 75 worms will hatch from every egg mass missed. Therefore, it is easy to understand that a few missed egg masses can result in a very wormy condition of the tree. Failure in thoroughness is the reason why a great many orchardists report poor leaf roller control.

If poor control occurred in portions of your orchard last year be sure and pick out the most favorable weather conditions this year to spray this section as many more eggs occur on the trees in such sections than where good control was obtained.

After the spray has dried on some of the sprayed trees examine them. If you find unsprayed limbs you can figure that you are doing a poor job. You can also figure that you will have plenty of leaf rollers if you do not do better work.

The following amount of diluted oil spray per tree has given excellent control during the past several years in a number of orchards under observation:

Trees 11 years old, 4.1 gallons;
Trees 12 years old, 4.5 gallons;
Trees 13 years old, 5.6 gallons;
Trees 14 years old, 7 gallons;
Trees 15 years old, 7.2 gallons;
Trees 17 years old, 8 gallons.

Check up your average usage per tree and if you find that you are under these figures it will pay you a big return to increase the amount of spray per tree.

FREIGHT RATE REDUCTIONS

MARKED reductions in freight rates on canned goods, dried fruits and vegetables, peas and beans in carload lots, shipped from Pacific Coast territory to eastern points, were made effective Monday, August 22. The rates affect shipments from Spokane, Walla Walla, Yakima and Coast points, to all eastern territory extending from St. Paul, Omaha and Denver to the Atlantic seaboard. On canned goods the basic rate is reduced from $1.20½ a hundred pounds to $1.05. On dried and evaporated fruits and vegetables the rate is cut from $2.00 to $1.45 on shipments in sacks or boxes and from 1.66½ to $1.25 on goods shipped in glass or cans. On dry beans and peas the cut is from $1.25½ to $1.05.

Entree of the Basket

(*Continued from page* 6)

inch to a full inch, depending on the commercial size. This variation is necessary to secure a tight pack. With a little study of sizes the packer is necessary to secure a tight pack. With a little study of sizes the packer will have no trouble in adopting one of the faces worked out in detail below, and will not have to patch a face by finishing with large or small apples. In arranging the apples the beginner will find that he can make great use of the minimum and the maximum longitudinal diameter of the size of the apple that he is working with. If the circle or ring lacks but half an inch, of being filled, or a fair-sized apple will not go in, it will usually be found that by changing several of the apples with a smaller or greater longitudinal diameter as the case may be, the space will be filled.

Each circle in the face of the basket should have apples in it as nearly as possible of uniform size of the commercial size that is being packed. Any perceptible size difference will detract from the general appearance.

Ring I. is the first ring put on. Start at the side of the basket so that the edge of the apple will not be more than a half inch above the edge of the basket. Succeeding apples should be placed very close together on the style of stem to calyx. If one apple is above the edge of the basket too far because of fruit being high below, select fruit that has a smaller transverse diameter or vice versa so that the result will be an even face. Then ring II. is put on in like fashion. Rings III. and IV. follow and sometimes with small commercial sizes it will be necessary to put one or two apples in the center which are spoken of as key apples.

As mentioned previously the height of the bulge is very important. The center will be higher than ring I. This is caused by the construction of the basket. Too high a bulge will cause unnecessary crushing of the fruit from the cover or by other baskets being placed on top. Too high a bulge will also interfere with the proper adjustment of the cover. An excessive bulge in the center will prevent the cover from fitting properly around the edge of the basket, which permits the fruit to protrude between the hoop of the cover and the top of the basket, thereby causing lid bruising.

It is not likely that it will prove profitable to ring face any fruit that is below 2 inches in diameter. A jumble pack with a smoothed off face will be best for small fruits.

While more time is required to ring pack a basket from the bottom than to jumble pack, a better pack can be secured with ring packing from the standpoint of even facing. It is easier to face a basket that is ring packed from the bottom than to face a basket that is jumble packed. The fruit in a ring packed basket is tighter than in a jumble packed basket and will not settle as much in shipment.

THE experiments carried on in the ring facing of odd shaped varieties of fruit were conducted with York Imperials. In many instances the longitudinal diameter was less than the transverse diameter in this type of apple, which makes it more difficult to face the baskets as compared with fruit that is regular in shape and conformation. Due to the shape of this particular variety it was found that the apples could be ring packed more expeditiously than apples of other types. This holds true especially of sizes that are from two and one-half inches up. In ring packing the basket the apples in the rings throughout the basket should be placed stem to calyx.

The Yorks were found to pack very closely. The tightness of the face rings can be secured best with apples similar in size and conformation. The juxtaposition of these apples depends on the skill of the packer in arranging these varieties so they will fit snugly one against the other. If there are smaller apples of the commercial size that is being worked with than there are large apples in the size, then the smaller apples should be used to make the first ring, the second ring should be a little larger and the largest apples of the commercial size should be in the middle.

Height of Bulge

THE height of the bulge is a very important feature in the packing of basket apples. Either too large or too small a bulge is unsatisfactory and will give the fruit of the facing an unattractive appearance. If the bulge is not sufficient the basket will arrive on the market with a slack pack. This will cause bruising and discoloration of the contents, and very materially reduce the sale value of the packages. It will also result in a disarrangement of fruit in the facing.

Too high a bulge will result in equally bad consequences. It will result in bruised and cut fruit in the face of the basket. There will be opportunity for the face to slip as the space between cover hoop and basket edge will allow fruit to slip out.

(*Continued on page* 18)

BETTER FRUIT

Published Monthly
by
Better Fruit Publishing Company
Twelfth and Jefferson Streets
PORTLAND, OREGON

W. H. WALTON.....Editor
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C. I. MOODY..... ....Advertising Manager

EASTERN REPRESENTATIVES
A. H. BILLINGSLEA .....
.....No. 1 Madison Avenue, New York
J. C. BILLINGSLEA .....
.....Advertising Bldg., Chicago
SAN FRANCISCO REPRESENTATIVE
EDWIN C. WILLIAMS .....
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All Communications should be addressed and Remittances made payable to
BETTER FRUIT PUBLISHING COMPANY
Subscription Price:
In the United States, $1.00 per year in advance.
Canada and Foreign, including postage, $2.00, payable in American exchange.
Advertising Rates on Application.

The Railroad Situation

The railway executives of the country have recently resorted to an advertising campaign that they claim is necessary to educate the people of the country to the necessity for a pronounced raise in passenger and freight rates. To make a short cut in coming to the point this action has not been viewed with either toleration or complacency by the shippnig public, more particularly the farmer—and when we say farmer we mean anyone who cultivates the soil whether for the production of fruit or other products. The farmer in asking and expecting more liberal terms in making it possible to market his wares is justified. In fact, he is justified by even the railroads who say that compared to other products those from the soil have taken a greater drop than in any other line of business. But — the railway executives point out that the prices of farm products in 1919, when they reached their peak, were 234 per cent higher than in 1913, and are now only 13 per cent higher than in the pre-war period of 1913.

On this basis, while admitting that transportation rates on farm products are too high, the railway executives say that they are not so high, but that the farmer can do business on a profitable or at least a living basis. On the other hand it is claimed by the railway executives that the railroads at the present time cannot remain in existence on a lower scale of rates and earnings than at present. These rates, it is officially stated by the railroads were intended by the Interstate Commerce Commission to enable them on the average to earn an annual return of 6 per cent on a valuation of $18,900,000,000. This valuation, which it has been claimed by many is too high, was not made, however, at the instigation of the railways, but by the Interstate Commerce Commission under a law, the passage of which was secured by Senators La Follette and which was considered fair, although the railroads opposed it.

The fact now remains that owing to their greatly increased operating cost the railways are far from making the earnings allowed them by the Interstate Commerce Commission and since they were returned from government ownership and placed under the present rates have incurred enormous losses. For these reasons the executives of the railways, while stating that a reduction in the present rates should not be indefinitely postponed, emphatically proclaim that a general reduction at the present time would be ruinous to the roads.

As a matter of fact the crux of the situation seems to be in the fact that while the railways recognize the plight of the farmer in regard to needing a change in rates, the railways cannot assist in changing this condition until the plight they are in themselves permits of it.

The most certain feature in regard to the situation is that while some commodities are so situated that they can be marketed at a price commensurate with the principle that they can stand all the traffic will bear, others can not. They must have a fair transportation rate to survive. On the other hand it is a well known fact that when the railroads are prosperous the country is prosperous and that we should exert our influence in a fair and equable manner to have the great arteries of the nation be made so.

Fire Prevention

The week devoted to the cause of fire prevention is assuming an important place in the national calendar devoted to civic affairs Fire losses even under the most protective surroundings are often of a heart and purse rending nature. Money cannot in many cases replace or restore things that have been destroyed by the unquenchable flame.

In later years this has become more and more emphasized and while the protection by insurance of architecture in its many forms is more greatly resorted to at present and is made much more easily obtainable than formerly, building to prevent fires through the use of inflammable materials is being taken up to a much greater extent. The fruit of this observance or precaution in what may be called a "better material, better building" campaign, has been noted in many communities, as well as their more complete observance of the things that make fires more impossible. In other words, do not build of wood if concrete and stone will make your structure safer and more valuable. And it will make it safer and more valuable by the greater security it gives and its lessened insurance risk.

In America very little was done along this line until a few years ago when the National Fire Protection Association was organized at Boston. Since then Fire Protection Week has become a special event in every city and town in the country and has even been taken up by the schools. Fire Prevention Week commences October 9. Do something during this week to help reduce our $1,000,000 annual fire loss.

Bees

Bees, those little indefatigable workers that may be said to be the only rival of the ant in our industrial insect life, like Shakespeare's description of man, "play many parts," as they hum through the sunny meadow or orchard sipping nectar here and there. To the beekeeper, generally speaking, this little gold banded or maybe black-bodied visitor to blossom and flower means little but pounds—pounds of honey. The buzzing of his diminutive wings likewise, mean little to the average fruit grower except—as he goes from blossom to blossom he instils in it life—the life of propagation; the life that brings fruit and shekels in the fall.

But a study of bees show that they mean more than this—that they have a civilization; that they have a well ordered industrial community and a perfectly appointed and operated factory. And last, but not least that they are a great help to man.

For years, used as the gatherer of honey they have been exploited for their store of this sweet by the beekeeper, professional and otherwise. Of late years, they have been found to be the careful and successful orchardist's best friend, for they make trees whose blossoms are sterile bear, and fruit grow where none grew before.

SONG FOR NATIONAL APPLE WEEK

By James Handly, Quincy, Ill.

Tune: Auld Lang Syne.

We come again on apple days,
To sing our songs once more,
And show our harvests of the fruit,
Now placed in autumn's store;
The beaming morning's light, in sparkling dews,
Has painted apples' rosy tints, in brightest hues.

And though we wander far away
From homes of early days,
Bright scenes of blossoming apple trees,
Will shine in songs we raise;
And when the ripening fruit, with twigs entwine,
Then dearest thoughts be brought to mind, for
Auld Lang Syne.

We meet with friends at apple feasts,
Partake best fruit that grows,
And see the flowers of blooming health,
In sweetness of the rose;
Then to the highest source, for blessings here
With joy we join the songs of praise, in thanks
sincere.

We'll not forget the orphan homes,
Nor those whose homes are bare,
For all who need in walks of life
Should have some watchful care;
To them we send some fruit for Auld Lang Syne,
And show some kindness yet, my dear, for Auld
Lang Syne.

My Experience in Filbert Culture

By Nat M. Norelius of The Western Walnut Growers' Association

MARCH 6, 1894 I planted my first half dozen filbert trees, consisting of English varieties. Ten years later, April 7, 1904, I planted 100 filbert trees of the Barcelona and Du Chilly varieties.

The following year, October 28, I added 60 trees to my filbert grove, making in all about 165 filbert trees divided as follows: One hundred and five Du Chilly, forty-eight Barcelona, four Daviana, three Cosford, four English, and one Clarke.

These filbert trees I planted in rows ten feet apart and alternating twenty feet apart in the row, thus making the actual minimum distance apart of the trees 13 feet, covering about seven-eights of an acre of ground.

My soil is clay loan, and the trees have grown thriftily in this soil from the beginning. They have had but one setback, caused by sun-scald. When the trees were three years old, the temperature running up to 105 degrees caused injury to the bark on the south side of the trunk, thus stunting the growth of a number of trees. Those trees that were stunted in growth I cut away and permitted several sprouts to take the place of the one—the stunted trees thus forming a bushy shrub. These I have found to bear equally as well as the one-stemmed trees.

The filbert tree is almost free from insect pests, such as infest our fruit trees, and therefore seldom needs spraying except for moss and other fungus growth. Spraying for this purpose will improve the condition and appearance of the trees.

Since the trees came to bearing age they have borne crops every season, but in varying amounts. Of the varieties I have I consider the Barcelona by far the heaviest bearer of crops. We now know that this is due to the need of outside aid in its pollination. With the proper pollinizer, we have found, that the Du Chilly is able to produce crops equal to the Barcelona. Of the mixed varieties, I have found the Cosford to be the largest and best looking nut, of good quality and a fair producer.

As to the quantity of the crops, I have no marvelous records to give you, but quote you the amounts of the last three year's crops; The 1918 crop total was 540 pounds, 187 pounds Du Chilly, 312 pounds Barcelona and 40 pounds mixed, which brought me from the crop $144.00. The 1919 crop total was 500 pounds, bringing me $155.00. The 1920 crop total was 1061 pounds, 508 pounds Du Chilly, 410 pounds Barcelona, 143 pounds mixed nuts.

I will now in closing briefly summarize what I have learned from my experience in filbert culture; Filbert trees thrive and bear crops in a variety of soils, from a heavy clay to a gravelly loan, but in any soil will respond to good care and proper fertilizing.

From 18 to 20 feet apart each way. I think is the proper distance to plant filbert trees. As to varieties, I would depend mainly on Barcelona. But, if I could get the proper pollinizers, I would plant one-half each of Barcelona and Du Chilly, selecting good sized and well rooted trees for planting.

I have found that a filbert grove requires less work and expense to keep in good condition than a fruit orchard and requires less labor and expense to harvest the crop.

Those interested in raising chickens will find a filbert grove an ideal run for their flock.

Entree of the Basket

(*Continued from page* 15)

It will make difficult the proper adjustment of the cover.

The proper bulge should be of that height which will cause the handle slat of the cover to fit snugly against the wire handles and in a concave position when these handles are bent down.

The use of cover pads has long been a custom in the packing of apples in containers. They are used to prevent bruising and to add attractiveness to the pack.

They should always be used in packing baskets where an attempt is being made to put up a high class pack that is of good quality and appearance.

THE proper fastening of the cover cannot be too strongly emphasized. The failure to properly fasten the cover will result in the cover coming off and the contents being spilled.

To properly fasten the cover for carlot shipments by freight the wire handles should be bent inward and down on the hand slat of the cover. It is not safe to ship in carlots and expect good results unless the covers are so fixed by the handles being bent down. For express and L. C. L. shipments the wire handles should be bent down and inward as in making carlot freight shipments and in addition side hooks should be used as shown in Figure 2. The wire hooks should be driven under the top outside hoop and bent down over the top of the cover hoop with pliers.

There are three general styles of covers in use, namely: the Standard, The Hoop and the Star Hoop Cover. Of these three styles the Standard cover has proven to be the poorest and should never be used with fruits. Experience has shown that the Standard cover is best suited for spinach, kale and other leaf vegetables.

The Hoop cover is not as well liked for fruit shipments as the star hoop cover, due ot the fact that the construction of this cover does not give the strength or protection that is needed for some fruits. It is a good cover and widely used, but for shipments that receive many handlings and that travel long distances the Star Hoop Cover is to be preferred. The Star Hoop Cover is very strong and offers maximum protection to the contents and greatest strength where it is most required, that is in the center, and is much preferred to any other style of cover for the shipment of heavy fruit in baskets.

Work in the plants owned by the Graves Canning Company with headquarters at Brownsville was recently resumed after a short shutdown. The plants of the company which are located at Woodburn, Sherwood and Sheridan, are now all in operation.

Conserving the Moisture of the Soil

NEXT to temperature, moisture is probably the controlling factor in the growth of plants. The importance of an adequate supply of moisture is most strikingly demonstrated in regions of deficient rainfall where irrigation is necessary for the growth of the crops (arid regions), but it is no less important in regions where the rainfall is usually considered sufficient for the needs of crops (humid regions). Not only must there be a sufficient supply of moisture, but it must be properly distributed throughout the growing season. It is well known that crops may be injured in a season that shows a high total rainfall, because there is deficient rain just at the stage where the plant needs it most.

Under all circumstances, therefore, it should be the farmer's aim to conserve the moisture in the soil in the arid regions to reduce as much as possible the labor and expense of irrigation, and in humid regions to protect crops against droughts. Various means may be employed for the purpose of conserving and economizing the moisture supply of soils.

Subsoiling is one of the most important of these means. Several of the stations have made careful studies of the influence of subsoiling on soil moisture. The Wisconsin station describes this influence substantially as follows: Subsoiling (1) increasese the storage capacity of the soil for moisture, and (2) increasese the rate at which water will sink into the soil, but (3) decreases the rate at which it may be brought back to the surface. Subsoiling also increases the amount of moisture available to crops, since plants are capable of utilizing a larger proportion of the moisture present in loose and coarse grained soils than of those in fine grained and compact soils.

As regards the best methods of subsoiling, a report of the Wisconsin station states:

"Subsoiling to be most effective should be done in such a way as to leave the soil loose, much as the stubble plow leaves it. To accomplish this much will depend upon the character of the tool and more upon the condition of the soil when the work is done. If the soil is so wet as to be plastic when the plowing is done, then the effect of the subsoil plow will be to wedge the portion of the soil which is heavily pressed into an even more compact and close texture than before, and thus develop a condition, the opposite of that sought. To simply form a long groove or channel in the subsoil by wedging the dirt aside gives little aid in the direction sought. Such work then, if done at all, should be done itself when the subsoil itself is dry enough, and this is most likely to occur in the fall after the crop of the season has withdrawn the moisture from it. Subsoiling late, too, leaves no time for the soil to lose its open texture before the rain to be stored reaches it."

In humid regions, as a recent bulletin of the California station points out, the soil as a rule is underlaid at a comparatively short distance below the surface by a subsoil which the roots of the plant penetrate with difficulty and from which they can draw little nourishment. The roots, therefore, spread out near the surface, and the plants require frequent irrigation or rains to sustain life. A suspension of either rain or irrigation for ten days or two weeks under these conditions usually results in injury to the plant. Under such conditions subsoiling encourages deep rooting, and thus enlarges the stock of water as well as the plant food at the command of the plant. In many parts of the regions of deficient rainfall as in southern California, plants (especially fruit trees) are capable of withstanding months of drought. This is claimed to be due to the fact that "in arid regions, as a rule, subsoils in the eastern sense do not exist; the soil is readily penetrable to great depths."

This can be done in humid regions, to some extent at least, by thorough preparation and tillage of the soil and in the case of fruit trees, by guarding against excessive surface fertilization. In arid regions frequent irrigation, it is claimed, encourages shallow rooting.

To prevent loss of water from the soil by evaporation it is necessary to check the rise of water by capillarity to the surface of the soil. As already noted, this is accomplished to some extent by subsoiling, but in order that the work partly accomplished by the subsoiling may be completed and finished, the surface of the soil must be kept covered by a mulch of loose, well-tilled soil by means of frequent tillage. Some experi-

ments of the Kansas station afford an illustration of the effectiveness of this means of conserving soil moisture.

One of the station fields which contained in round numbers 26 per cent of water in the first foot of soil, had one portion plowed, another disk harrowed, and a portion left untreated. The ensuing dry weather in the course of four weeks, notwithstanding several light rains, reduced the moisture of the untreated part to 15 per cent and that of the disked land to 18 per cent, the plowed ground containing 21 per cent. The last two were in excellent condition for seeding, while the first would plow up lumpy and unsatisfactory.

In the experiments at the Kansas station plowing proved as effective as any form of tillage tested. If time does not permit plowing, the speedy work of the disk harrow compares favorably in efficiency. In either case, if rain sufficient to start the weeds, follows, kill them with a harrow. This will at the same time break up any crust and preserve the soil mulch.

Whether the best results in preventing loss of moisture from the soil in humid regions will be obtained by subsoiling, shallow cultivation, or deep cultivation will depend very largely upon the character of the soil and subsoil. The Kansas station found no essential difference in the moisture content at the different depths of soil that had been prepared in the spring by the shallow plowing, by deep plowing and by subsoiling. In experiments at the North Dakota station on different methods of preparing soil and tillage for wheat the largest yield was obtained from land subsoiled eight inches below a six-inch furrow. A surface mulch of well tilled soil three or four inches thick is usually considered sufficient to afford effective protection against evaporation in humid regions. In regions of deficient rainfall, however, twice this depth is considered necessary.

In humid regions there is danger of serious loss of nitrates in subjecting bare plowed land to the long continued leaching action of abundant rains, as is done in summer fallowing and fall plowing; nevertheless, the Kansas station has found that the plowing of stubble as soon as possible after the removal of the previous crop, with frequent stirring of the soil, as described above, "not only insures a perfect seed bed for wheat in respect to moisture, but the soil has time to settle to the firm condition so advantageous to wheat, and the bareness, warmth and moisture are most favorable to the formation of nitrates from organic matter." In regions of deficient rainfall loss by leaching need not be feared. Under such conditions both summer fallowing and fall plowing may prove of great value in conserving moisture.

Fall plowing wherever the land is not naturally adequately absorbent, and is not thereby rendered liable to washing away, is a very effectual mode of utilization of the winter's moisture to the utmost, so as to bring about the junction of the season's moisture with that of the previous season, which is generally considered as being a condition precedent for crop production in dry years. The same, of course, holds true of winter irrigation, the frequent omission of which in presence of plentiful water supply at that season is a prolific cause of avoidable crop failures. Moistening the ground to a considerable depth by winter irrigation is a very effective mode of promoting deep rooting, and will thus stand in lieu of later irrigations, which, being more scant, tend to keep the roots near the surface.

Moisture escapes from soils bearing crops much more rapidly than from bare soils. This fact has been very fairly and clearly demonstrated by investigations by the Iowa, ansas, Wisconsin and other stations. These investigations show that sod land and soil bearing different crops always maintain less moisture than uncultivated soil of the same character. It is undoubtedly true that the injurious effect of weeds is due fully as much to the moisture which they withdraw from the soil as to the plant food which they consume. The poor growth of crops near hedgerows and woods is due largely to withdrawal from the soil of moisture required for the proper growth of the crops. It is a well known fact that the culture of crops in the orchards may prove injurious to fruit trees, especially in the dry seasons. This is due mainly to the withdrawal of moisture needed by the trees. The danger from this source is especially great if the fruit trees are very shallow rooted.

Northwest Notes From Here and There

OREGON

SIXTY carloads of apples will be the output from Wasco county orchards this season, according to J. H. Fraser, manager of the Oregon Growers' Co-operative Association in that district. The season for small fruits for which The Dalles country is noted has closed successfully, most of the product being marketed in the Northwest. Two cars of prunes which were sent to London brought $80 and $85 per ton, while nine cars of similar quality, which were marketed in New York, brought $59 per ton. The peach crop, which was marketed from The Dalles this year totalled about 15 cars.

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IN ESTIMATING the fruit shipments that would be made from the Medford district this year, Mark Montgomery, local agent of the Southern Pacific Company, says that the railroad has handled over 600 cars of pears and expects to ship out 1200 more cars of fruit before the season ends. In 1920 the total shipment of fruit was 1050 cars.

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Clifford C. Ross, manager of The Dalles plant of The Kings Dehydrated Products Company, who was a visitor in Hood River recently, stated that the Kings Company expects to dehydrate 7,000 tons of apples this year. The company has recently finished dehydrating 675 tons of prunes and 1000 tons of loganberries.

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ACCORDING to estimates recently made public at Roseburg the prune crop of Douglas county will this year be more than one-third of the total prune crop of the Pacific Northwest. As the estimates of the prune crop in the Northwest vary from 22,000,000 to 27,000,000 pounds and the crop in Douglas county is said to be approximately 9,000,000 pounds, it can be seen that the one-third estimate hits the mark pretty closely.

APPLE buyers in the Willamette valley are reported numerous this year and the opportunity to move the crop there is said to be the best in several years. A large part of the apple tonnage in the Willamette valley will be moved this year through the Oregon Growers' Association.

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THE demand for the early apple crop at Hood River, consisting largely of Kings and Gravensteins, was in excess of the supply at good prices. The movement of Bartletts handled by the association totalled over 22 cars, while the shipment of d'Anjous will be over 75 cars.

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THE first car of the Hood River valley's estimated apple tonnage of 2,250 cars for this year was shipped a few days ago by the Hood River Fruit Company. The shipment was a car of Gravensteins which was routed to Chicago.

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A REPORT from the walnut growers of the state is to the effect that the industry is growing so rapidly that it is becoming necessary to develop new markets and establish grades. Fifty prominent Oregon growers who recently attended a conference at Salem under the auspices of the Oregon Growers' Co-operative Association decided that walnuts will be sold this year under the Mistland brand as Jumbo grafted, and as No. 1 and No. 2 grades. In addition to a bumper crop from the older orchards this year a large acreage of new stock is coming into bearing.

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A VERY light prune crop and a far below normal apple crop is the prediction for the Sheridan district this year. About 20 cars of apples is the number placed as the quantity the Growers' Association will handle. Prunes started to come in about the middle of September, but it was only necessary to use part of the dryer, which is the second largest in the state to handle the crop.

ONE of the large prune deals of the season that has attracted a good deal of attention was the sale by W. F. Drager of Salem of 1,000,000 pounds of this year's crop belonging to independent growers at Roseburg to Rosenberg Brothers of San Francisco. The sale was on a basis of 9½ cents for 30-35s.

THE low price of Loganberries and the inability of the canneries of many districts to handle the first part of the crop because of a late start, stimulated drying this year. High price of the berries for the past few years has made them prohibitive for drying and this year's dehydrated berries will go into a bear market. The Oregon Co-operative Association dried more than 50 tons of Logans at Sheridan alone. They are being packed in 8-ounce packages similar to those in which raisins are sold and also in 50 pound boxes. A large part of the dried berries, which are in reality a small proportion of the total crop, have already been disposed of.

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WASHINGTON

THE winter apple shipping season started at Wenatchee September 8, when the first car of King Davids was dispatched by the American Fruit Growers, Inc., to New York. Many cars of Winter Bananas have been forwarded from the district, but the King David is usually regarded as the variety that marks the real opening of the season. Carloads of Jonathans will follow immediately and within a short time the first solid train load of apples will go east from Wenatchee.

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AT a gathering of representative cranberry growers at Long Beach, W. E. Schimpf, sales manager of the Pacific Cranberry Exchange, predicted a ready sale for Pacific Coast cranberries this fall, owing to short Eastern crop. This, he said, was on the condition that the cranberries are graded and packed right.

The meeting recommended to the state horticulturist that he establish and enforce the following rules: That the standard grade be berries which will pass over a 7-16 inch screen; that the fancy grade consist of berries which will pass over a 5-8-inch screen; that the berries be of uniform color; that they be solid pack, conform to labels as to variety and the date packed be on the box, and that all berries visibly affected by fungus, worms, frost or imperfect in any way be culled out and that there be a tolerance of culls of only 2 per cent.

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DR. R. H. Wells of Yakima, reported receiving $20,451 from his 14-acre peach orchard. Dh. Wells has had the same foreman on his farm for four years.

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IRRIGATION at Hunters, 75 miles northwest of Spokane, has produced a crop of 75,000 to 100,000 boxes of commercial apples in the orchard of the Hunters Land Company, according to J. M. Glasgow of Hunters, a Spokane visitor. The Hunters Land Company's orchard, made up of Jonathan, Winesap and Newtown apples, is the pride of the district. State inspectors hold it up as an example to orchardists. The 1400 trees on 275 acres are now in their third year. The crop will be marketed direct.

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Apples escaped all frost damage in the Spokane district during the cold snap about September 18, according to C. J. Webb, assistant manager of the Spokane Fruit Growers' Company. The only effect of the early freeze, he believes, will be to hasten the maturity of the apples, bringing along the color more rapidly. "The apple picking season will be general in the Spokane district about September 25," said Mr. Webb. "We are picking some Winter Bananas in several sections now, but the tonnage will not be great. Picking of Wageners and Jonathans will begin in about two weeks. Our survey of frost damage shows that considerable loss will result to the growers through the nipping of tomatoes and cantaloupes and the harm done to the fodder crops, corn and sunflowers grown for ensilage for winter feed. There was a big prospective tomato tonnage and it is almost completely destroyed. Cantaloupes are not such a serious item. The big Northwestern apple crop this year makes the possibility of car shortage serious. The railroads already are storing hundreds of cars in the Wenatchee and Yakima districts ready for the first movement of the fruit. The Northwest has more storage than before, but the total space is but a small percentage—possibly 20 to 25 per cent—of the anticipated tonnage. Wenatchee alone will have 15,000 cars of apples and Yakima, 11,000 and nearly all ordinarily will be moved out by the first of the year."

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GROWERS and shippers of the Spokane valley met at Opportunity recently and agreed on maximum figures for the wage scale to be effective this season in orchards and packing houses. These show a slight reduction from 1920. The following scale was agreed upon for packing apples:

Fruit sorted and sized, per box, 4½ and 5 cents; sorted, but not sized, per box, 5½ and 6½ cents; clean, but neither sorted nor sized, per box, 7½ and 8 cents.

Face and fill pack, where one tier faced, per box, 4 cents; face and fill, two tiers, faced, 5 cents.

Packing apples containing many culls, price according to labor involved.

Sorters, maximum, per hour, 35 cents; truckers, laborers, etc., per hour, 30 cents; box lidders, who mail and stamp boxes, per box, 1 cent; minimum wage per day, $5; picking and orchard work, per hour, 30 cents; foreman of sorting crews, trucking crews, car loaders, per day, $4 to $5. Good packers can make $7 or $8 a day at the figures agreed upon. No shortage of orchard and packing house labor is anticipated this season.

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THE apple crop in the Northwest, including Washington, Oregon and Idaho, this year will be one of the largest, if not the largest, in the history of the district, according to J. S. Robinson, sales manager of the Earl Fruit company. He estimates the crop at about 30,000,000 boxes, valued at $50,000,000 to $60,000,000. "While the crop for the whole Northwest is large this year the yield in Spokane valley is somewhat short," said Mr. Robinson. "The Spokane valley crop will run about 1,130,000 boxes. The apples in the Northwest are high in quality this year. Picking has already begun at Yakima and Kennewick on Jonathans and Winter Bananas. Picking started in the Spokane valley the end of September on Wageners first and then on the other kinds. The Palouse corporation crop will be around 150,000 boxes, as compared with 100,000 last year, an increase of 50 per cent. The crop in the Arcadia district is good and will be about 250,000 boxes. The average value of the Arcadia apples will be $1.50 a box. While the crop in the Northwest is large this year it is not much larger than the one last year, which was exceptionally good. Most of the apples will be shipped to Eastern points and some will be exported. The decrease in freight rates from $1.62½ per 100 pounds to $1.50 per 100 will not make much difference in the price of apples."

IDAHO

CHARLES G. ANDRUS, state horticultural inspector for the central Idaho district, has been transferred to the Payette field and the duties of inspector in the central Idaho district will be taken over by Bert F. Savage, director of agriculture for north Idaho. In taking over the inspection duties, Mr. Savage has resigned his duties with the Northwest Live Stock Association and the Lewiston-Clarkson tri-state fair organization and the offices of these organizations have been removed from the Thiessen building to the Commercial Club quarters in the Bunnell block.

While serving with the fair organization Mr. Savage obtained the county exhibits from Lewis and Kootenai counties in Idaho and Walla Walla county, Wash., and directed much of the fall fair advertising in the outside districts.

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SOUTHERN IDAHO has a fine crop of Italian prunes and picking has started. The crop is expected to run about 1200 cars.

AT a recent meeting of Coeur d'Alene valley apple growers, 35 miles east of Spokane, R. L. Michael, apple buyer from Chicago, offered to buy the entire crop of every member of the association, pay 25 cents a box in advance and furnish boxes, the remainder to be paid when the apples are loaded on cars. He quoted the following prices: Jonathans, $1.50; Wagners, $1.30; Rome Beauties, $1.10, and Delicious, $1.75 to $2.25.

What They Are Doing in California

GROWERS in the state of California will hereafter can their fresh figs themselves. Starting this season a large tonnage of fruit in the form of canned figs, preserved figs and fig jam will be placed on the market by the California Peach and Fig Growers, a co-operative marketing association of over 8,000 members.

The move marks the cutting away from the independent canning interests and the growers' organization will not only pack their products, but will market them as well.

In order to handle the growing tonnage of figs in California, a large proportion each year will be diverted to canned products and the balance dried as has been the case heretofore.

The association has erected two of the most modern canning plants on the Pacific Coast, as finely equipped as any in the country and the operations have already been started.

The California Peach & Fig Growers is the first of the big growers' organizations on the Pacific Coast to erect and operate canneries for their members on a large scale. The departure represents an investment of over $100,000 and the two plants now in operation are located at strategic points in the California fig belt, so that the cost of deliveries is so equalized that every section of the belt is adequately served.

The operation is being watched with interest by various associations and if successful will probably sound the knell of big independent canneries depending on grower organizations for their fruit.

The association plans to put out the largest variety of fig products ever offered and an experimental department has been working to perfect a number of by-products from the fig industry.

By doing their own canning, the association believes that violent fluctuations in price that have characterized the fresh fig sales and the scarcity of a growing demand in the United States for high class fig products will be eliminated.

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THE California Prune and Apricot Growers' Association, the reorganized California Prune and Apricot Growers, Inc., which represents more than 82 per cent of the prune acreage and 75 per cent of the apricot acreage of the state, officially came into existence Wednesday when the first meeting of its voting board was held here.

The thirty-nine members of the voting board, chosen by popular election last June, elected fourteen directors for the new association and directed them to proceed with the incorporation of the association.

The new directors are W. A. Yerxa, Princeton; Lloyd H. Wilbur, Yuba City; Henry Wheatley, Napa; Mark L. MacDonald, Santa Rosa; Geo. C. Alexander, Healdsburg; H. G. Coykendall, Cupertino; T. S. Montgomery, San Jose; A. Kammerer, San Jose; J. O. Hayes, San Jose; C. D. Cavallaro, San Jose; W. R. Kingston, Ventura; C. G. Hamilton, Hemet; Arthur Swall, Tulare; H. C. Dunlap, at large.

The voting board also approved the nomination of W. G. Alexander of San Jose as the representative of Governor William D. Stephens on the board of directors of the new association.

The voting board chose Irwin E. Pomeroy of Santa Clara as permanent chairman of the new board and made Martin J. Madison of Hayward, permanent secretary. Both of these men occupy similar positions on the board of trustees of the present association. Sheridan W. Baker of Santa Rosa was elected permanent vice chairman of the new voting board.

The old association will continue in existence until the 1921 prune and apricot crop has been completely cleaned up. The first crops which will be sold under the terms of the new contracts held by the reorganized association will be the prune and apricot crops produced in the fall of 1922.

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THE marvelous increase in fruit and melon shipments and in wealth in Imperial county reads like a romance, but cold figures furnished the California State Department of Agriculture by F. W. White, horticultural commissioner in that district, soon dispel any such idea. According to these figures, in 1915 Imperial county shipped $375,000 worth of tree fruits and $400,000 worth of cantaloupes. In 1921 it shipped $600,000 worth of tree fruits and $13,000,000 worth of cantaloupes—an actual net valuation of $8,000,000 out of a section where but a few years ago the fertility of the soil was questioned, the transportation limited and the market so distant that those who engaged in fruit raising in Imperial county were looked upon as having engaged in a gamble. The factors that carried the day, according to Mr. White, were water, capital and perseverance.

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ESTIMATES of California's deciduous fruit production this season are: Apples, 4,802,400 bushels; peaches, 244,955 tons; pears, 63,000 tons; prunes, 62,450 tons; apricots, 51,750 tons; cherries, 9,900 tons; plums, 21,700 tons.

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NEW walnut acreage in California that came into bearing this year was expected early in the season to bring the state's production up to the 60,000,000-pound mark. Late frosts, however, caused a large loss and cut down the yield in many sections. The crop is now estimated to be between 36,000,000 and 40,000,000 pounds.

W. H. Palhamus, president of the Puyallup & Sumner Fruit Growers' Association, predicts that Evergreen blackberries will this year net Washington growers 10 cents a pound.

Cannery Notes

CANNED Foods Week will be held March 1 to 8, 1922, instead of the first week in November as originally announced. This decision was reached following a conference of the National Canners' Association held recently. The date was changed, it is said, due to the fact that the later date would give the members of the association an increased

opportunity for working out more thoroughly numerous details tending to increase the success of the affair. Numerous state and other meetings will be held between now and the date of the annual meeting and a strong national-wide campaign reaching consumers of canned foods in every section of the country is planned.

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THE cannery at Estacada, Oregon, which was incorporated August 20, has authorized an issue of 5000 shares. The shares will be sold only to berry growers and only stockholders' fruit will be put up. The cannery, which has been in operation only a few weeks, has completed a pack of 1200 cases of berries that has been largely sold in Chicago. From the sales that have been made it is stated that growers will receive 5 cents a pound for loganberries and 9 and 10 cents for raspberries. During the evergreen blackberry season the management of the cannery stated that it was prepared to receive 100 tons of blackberries.

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THE Newberg, Oregon, cannery made a heavy run on pears this season. Three hundred persons were employed and more than two cars of pears shipped out daily in addition to considerable other fruit. The quantity of canned goods sent ont weekly was about four cars and this amount, it is stated, could have been greatly increased if additional help could have been secured.

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THE Lebanon, Oregon, cannery closed down September 13 for the season, with the understanding that it would stay closed unless it became necessary for it to run part of the time to close up a few of the late crops. The season for the Lebanon institution has been a light one and it has not operated to its capacity at any time, notwithstanding the fact that it handled 100 tons of blackberries this year. The cannery is able of handling 20 tons of these berries a day, but the largest run this year was 17 tons. The season for these berries is usually from three to four weeks.

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THE Oregon Packing Company which opened its pear and blackberry canning season at Salem, Oregon, the latter part of August expects a 40-day run on these fruits. During the peak of the season 250 workers will eb employed with a payroll of approximately $1,000 per day. As the demand for canned blackberries is heavy the company announces that it will receive as much tonnage of this fruit as it can obtain. The opening price to growers was 4 cents a pound.

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EMPLOYING 200 persons and distributing a large sum of money to employes and growers between now and January 1 will be the result of the re-opening of the Libby, McNeil & Libby cannery at Yakima, Wash., which was closed during the cherry season. Officials of the cannery announce that they have closed negotiations for 2,000 tons of pears and will take 3,000 tons of cull apples if they can be obtained at reasonable prices. The company is reported to have paid $40 a ton for pears and will pay $10 a ton for cull apples.

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Marketing News of Interest

WASHINGTON state shipped 31 carloads of apples on September 16, being exceeded only by California and New York, according to the daily report of the federal bureau of markets, Spokane. California shipped 45 carloads and New York shipped 81 carloads. The total movement in the United States on September 16 was 265 carloads. F. o. b. prices at Wenatchee on the 16th instant were: Jonathans, extra fancy, $1.85; fancy, $1.50 to $1.65. Delicious, extra fancy, $3; fancy, $2.25 to $2.50.

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PRICES on all sizes of 1921 pack prunes from 30-40's to 60-70's, inclusive, were advanced recently one-quarter of a cent by the California Prune and Apricot Growers, Inc., according to announcement given out by H. G. Coykendall, general manager of the association. The advance carried out predictions made less than two weeks ago by association officials in naming the first formal prices for 1921 pack prunes, that any change from the prices quoted at that time would be to a higher level. The new prices named by the association for 1921 pack are: Sunsweet quality, 30-40's, 9¼c bulk basis; 40-50's, 8¼c bulk basis; 50-60's, 6¾c bulk basis; 60-70's, 6¼c bulk basis. Though no prices have been announced on 20-30 prunes by the association, prices being quoted in the trade at 25c a pound flat, packed in 25-pound boxes, f. o. b. California common shipping points. Prices for Growers' Brand prunes were also boosted by the association one-quarter of a cent a pound on all sizes, 30-40's to 60-70's, inclusive. Prices on all sizes of Growers' Brand prunes are one-quarter of a cent less than prices quoted for Sunsweet quality. Association officials announced that they had made a very satisfactory booking of orders for 1921 pack prunes and that they had on hand sufficient orders to practically clean up the heavy stocks of 1920 holdover now stored in their packing houses throughout the state. Packing and shipping of these holdover stocks is now being speeded as fast as possible and all stocks of 1920 crop prunes will probably have been shipped out of the state by the middle of October.

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APPLE buyers are paying $12.50 a ton for cull apples at Clarkston, Wash., which is said to be a record price for this grade. A number of contracts have been made for orchard run apples delivered at the packing house at $1.10 a packed box. The apple crop is the heaviest in years and the quality is good.

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APPLE harvest in the Walla Walla valley started September 12, with the picking of Jonathans. Prices will run from $2.25 for extra fancy to $1.75 for C grades. The largest single pack in the valley will be at the Baker-Langdon orchard, which is expected to yield about 250,000 boxes.

Orders on file at local packing houses call for carload shipments to points as far east as Buffalo and as far south as New Orleans.

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NEW YORK and Chicago both report the first arrivals of Winter Bananas, selling for $4.50

a box. A New York firm reported to William Ferguson of Yakima, that a car of his Bartletts sold in that city for $4.25 to $4.65 a box, and that California Bartletts are off the market, with a strong demand for Northwest Bartletts.

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FIFTY Yakima valley potato growers met recently with County Inspector W. B. Meyers and State Horticulturist Close at Toppenish, for a demonstration of the grades to be used this year to meet the standard United States grades. According to the men present the valley crop will average well in the No. 1 grade, as most of the potatoes this season have made a good growth, virtually free from disease. The average No. 1 potato was quoted at $25 a ton on the reservation on September 18.

THE first annual Rogue River Valley Pear Show which was held in the Chamber of Commerce exhibit rooms at Medford was a big success. On the closing day it was estimated that 4,000 people visited the pear exhibits which told the story of the excellence of this district for raising this fruit. There were 293 plate displays, while the number of pears on the plates totalled 2,500.

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PRUNE drying during the latter part of September was greatly hastened owing to the prediction by the weather man that the rainy season was about to set in and would include the whole Northwest region. Another week of good weather and it is expected to clean up the prune drying season in Oregon.

THE two largest sales of orchard property during the year in the Rogue River valley were announced recently. Colonel R. C. Washburn of Table Rock sold his fine 174-acre Table Rock orchard property to Captain H. M. Tuttle for $40,000. Fifty-five acres are in orchard, 28 acres of commercial pears and 27 acres of Newtown and Winesap apples, and 40 acres in alfalfa. Captain Tuttle, who is from Nebraska, has been in the United States army service five years. The other sale was that of the Hampton orchard of 50 acres near Medford, owned by Mrs. Bingham of Santa Barbara, Cal., to Eric Wold of Medford for $35,000.

Our Inquiry Department

WILL you kindly give me the statistics available in regard to the apple crop from the years 1908 to 1918. Also the meaning of the national apple crop and the Commercial Crop.—J. C. B., Washington.

We have no statistics available to give you a comparative report on apples from the years 1908 to 1918. The total apple crop for the country in 1918 was 24,743,000 barrels.

Replying to your inquiry as to the meaning of the "national apple crop" and the "commercial crop" of the country, the difference is this: The national crop means the entire crop produced in the United States, while the commercial crop applies to that part of the crop which is marketed or sold on the commercial market.

As you are probably aware, there is an immense quantity of apples that is never sold. This portion goes into home consumption and is used for other purposes, or is allowed to go to waste.

The fact that one of these crops is frequently described in barrels and the other in bushels have no particular significance. Apparently, the writer seems to use whatever term comes uppermost in his mind in describing quantities.

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WILL you kindly inform me if there is any comprehensive list that is published of all known varieties of fruit, chiefly apples and pears with a correct description of them. I fancy there is such work published with a glossary of this description.—G. M. G., Kelowna, B. C.

There is no book published giving a full list of the varieties of fruit now under cultivation in the United States. The United States Department of Agriculture, Bureau of Plant Industry, Bulletin number 56 on the Nomenclature of the Apple is the most complete, on that fruit, of anything published.

The same department in Bureau of Plant Industry, Bulletin 126 on the Nomenclature of the Pear gives the most complete list on that fruit.

The New York Experiment Station at Geneva, New York, has published in book form a very good description of the most common varieties grown in that state which, by the way, includes most of the varieties grown in the United States.

They have two books on Apples of New York, one on the Plums of New York, one on Peaches of New York. and one on Cherries of New York. These can be obtained, I believe, from the state commissioners of agriculture at Albany at practically the cost of publication and they are the most satisfactory referance books published. New vareties are being introduced every year, of course, and it is impossible for any publication to keep entirely up to date because of this, but the ones listed here are, I believe, the best.

PROF. O. M. MORRIS,
State College, Pullman, Wash.

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COULD I use something to disinfect the soil in which the roots of my trees are affected with what may be crown gall or some other like disease.— O. R. J., Oklahoma.

From what you tell us the diseased trees in your orchard are apparently affected with crown gall, for which there is no remedy. There is nothing you could use to sterilize or disinfect the soil in which they are planted. The safest plan for you to follow will be to dig out the trees and set new ones that have been inspected and found to be perfectly healthy.

Orchardists and other friends of Floyd Young, the frost expert, who until recently was stationed for several years at Medford, will be pleased to learn that he has been promoted in the U. S. Weather Service and will become meteorologist in full charge of frost investigations and forecasting on the Pacific Coast. Mr. Young for the past year has been in charge of the weather bureau at Davenport, Iowa.

Snapshots

WASHINGTON'S apple crop will bring to the state this year $50,000,000, an amount unprecedented in the history of the Northwest apple industry, according to a survey of the eastern and central Washington orchards by experts of the Northwest Fruit Exchange and confirmed by E. B. Kelley, district horticultural inspector at Spokane. The state is expected to produce 27,000 cars.

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CONTRACTS have been signed by James R. Wilson, secretary-treasurer of the Palouse corporation, whereby 35 girls from California will come to Spokane at apple picking time to pack the company's fruit at Fairfield and Waverly. The girls are orange packers in their home state and regard the Northwestern outing as a sort of holiday. The Palouse corporation expects to harvest 150,000 boxes of apples this year from its 1200 acres of trees at Waverly and Fairfield.

With the Poultry

THE VALUE OF THE TRAPNEST

A well known practical poultryman advises that the most prepossessing hen is not always the most industrious layer. She may be the loudest cackler, but if her owner uses trapnests she cannot fool him, for he can check up on the results.

The trap nest is so arranged that when the hen enters she is confined until released by the attendant. Specialists of the United States department of agriculture say that trap nests may be used to advantage by the best breeders of hens. It adds mechanical precision to judgement and experience in developing the flock and maintaining it at a high standard of egg production. It tames the birds and tends to stimulate laying. It furnishes definite knowledge of the traits and habits of each hen. It furnishes the most satisfactory basis for breeding, and it eliminates the non-productive hen.

In flocks of 50 or more, a three compartment trapnest should be provided for every ten hens. In smaller flocks a slightly larger proportion of nests is needed. Numbered bands are placed on the legs of the hens and a record is kept of their egg production. Frequent visits to the nests are necessary, especially when the hens are laying freely and during warm weather. There should never be less than three visits a day, and four or five would be better.

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CONFINING THE BACKYARD FLOCK

THERE is a double reason for confining the backyard flock. It gives a better opportunity for increasing egg production and from restraining them from straying into your neighbors' garden where they may cause damage and are almost sure to cause ill feeling.

The yard should be inclosed by a board or wire fence. Wire is preferable, as it is cheaper and the hens are less likely to fly over it, say poultry specialists of the United States Department of Agriculture. If cats prove troublesome where one is raising chickens, it may be necessary to cover the top of the yard with wire also. A board should not be used at the top of a wire fence, as this gives the hens a visible place to alight and thus tends to teach them to fly over.

A five-foot fence is high enough for most conditions, but if the hens show a tendency to fly over such a fence the flight feathers of one wing should be clipped. Leghorns need a six-foot fence. The larger the yard the better the hens will do, as it not only gives them greater opportunity to exercise, but also makes it possible to maintain a sod on the yard. In most cases not enough land will be available so that a sod can be maintained.

If the yard is fairly large, it can be divided into two parts and green crops, such as oats, wheat, rye, or Dwarf Essex rape allowed to start in one yard while the hens are confined to the other. The green crops should be sown very thick, and the following quantities will be found satisfactory for a yard 25 by 30 feet: Wheat, 2¾ pounds; oats, 1½ pounds; rye, 3¼pounds; rape, 5 ounces. when the growing stuff reaches a hieght of 3 to 4 inches the hens can be turned upon it and the other yard similary sown.

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ECONOMY IN MODERNLY BUILT POULTRY HOUSES

MODERN poultry houses such as are used by successful poultrymen or smaller ones adapted to the small farm flock, can be built more cheaply than the old style, double constructed poultry houses of 20 years ago. How it is done is described by James Dryden, professor of poultry husbandry, in Oregon Agricultural college station bulletin No. 179. The bulletin contains plans and diagrams of construction of several sizes of poultry houses that have proved successful.

The type of house advocated has one side or end open and protected by wire screening. All floor space is utilized for scratching by having perches, dropping-boards, and nests supported by bracket braces fastened to the walls. The smaller size, 8x12 feet, for the farm flock, can be built on runners of 3x6 inch stuff 14 feet long so that a team can move the house easily. This size is large enough to keep 40 hens in during bad weather without decreasing egg production.

Health and comfort requirements of fowls are discussed in the bulletin by Professor Dryden and the modifications imposed by location on the farmstead and the different types of houses adapted to successful poultry raising are gone into simply and clearly.

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Poultry Notes

GRIT is very essential to the proper feeding of fowls. Too often it is not provided continually and when given at odd times causes the fowls to eat too much. This should be avoided, as it causes bad digestive conditions.

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IN keeping your poultry house free of insects you will find that kerosene emulsion is more effective than the plain kerosene. Although the former is more trouble to make it lasts longer and does the work better.

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TO raise geese most profitably they should be afforded liberty and plenty of grassy range. They thrive best on low lying lands which are not suitable for most other fowls and being coarse feeders will eat nearly everything in the shape of green vegetation.

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WHEN poultry become infected with "pip" the diseased birds should be isolated. Do not remove the "pip" when it occurs on the tongue. Apply glycerine twice daily. If treated in the beginning the trouble may be cured.

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ALWAYS bear in mind that it pays best to raise and keep good stock. In addition to the remuneration received from the hatching eggs there is always the sale of individual birds at good prices.

Bees and Beekeeping

Edited by AMOS BURHANS

ALTHOUGH there has been a fair flow of nectar the latter part of the fall and so far during Indian Summer reported from all over the country, it will be a good plan in early October to make sure each colony has sufficient stores for the winter. Pick a warm sunny day for the job and if you find they need feed give it to them fast. A fair colony can put away a gallon of syrup a day. Make it two parts sugar and one of water by bulk.

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THE 1920 census tells us there are 3,476,346 hives of bees in the United States and that they produced about 55,000,000 pounds of honey. This makes an average per colony of less than twenty pounds per season. Many beekeepers on farms are getting from one to three hundred pounds per colony because they give the bees care and use modern methods.

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IF YOU are one of those who like to keep up to the minute on beekeeping things, you had better send for the new bulletin on Control of Swarming. It is a work of 48 pages by the well known beekeeper, Geo. S. Demuth and may be had by addressing the Bee Culture Division, Bureau of Entomology, Washington, D. C. Control of Swarming is one of the secrets of successful beekeeping and this new bulletin will give you some valuable information about it.

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SLOWLY but surely the big hive idea is spreading. Beekeepers who try one of the modified Dadant hives in their apiaries almost invaribly get more of them. This hive gives the colony additional room for ventilation, provides eleven big frames for the brood nest, each from two inches plus deeper than the standard Langstroth frame, giving greater room for the laying of the colony in the winter and forty percent greater room for the laying of the queen. My experience with the big hives is that they winter bees better, build up faster in the spring and that the colonies in them gather more nectar.

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THE thrift and work accomplished by a colony depends entirely on the queen. She should be young and bred from a mother who has made a great honey gathering record. Two seasons is about the length of her best usefulness. We requeen all colonies every other year and sometimes oftener. A good young queen is the one that will stay at laying late in the fall and her colony having the fall reared bees will come through the winter best. It takes young bees to stand the winter cold. The more of them there is in the hive the stronger the colony will be when it comes out in the spring.

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BEES wintered in cellars should be kept in a temperature of from 45 to 50 degrees. The cellars must be dark and clean. They should have outside doors to permit ventilation and regulation of temperature.

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EXTRACTED honey is still selling over the country at twenty to twenty-five cents per pound at retail. Comb honey is bringing from thirty to fifty cents per pound. It is a wise beekeeper who sells locally all his product and keeps the price at a fair figure.

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BETTER close down the entrance of the hives on the cool nights from now on until the bees are cellared or put away for the winter. In my yard in August we lost some broods because of a sudden cold snap and entrances too large to help the bees keep the brood from chilling. A space three-quarters by four inches is plenty big enough for the average colony now.

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THE six states producing on farms over two million pounds of honey each in 1920 are Iowa, California, Texas, Wisconsin, Colorado, New York. This does not include the production of honey in towns and villages which will greatly swell the amount.

HUBAM CLOVER, also known as Annual Sweet Clover, a compartively recent discovery in the plant world, is pronounced the most perfect bee pasture that has yet been grown. The Annual White Sweet Clover is a legume plant that reaches its full maturity within three to seven months from time of planting. It grows from three to seven feet high, is one of the richest feeds known, and takes nitrogen from the air and stores it in the soil. By its use in the farm rotation as a substitute for the ordinary clovers all the advantages of a clover crop can be had the same year that another crop is harvested and thus a full year saved in the crop rotation. When in bloom the plant is covered with white flowers growing on long slender racemes and is one of the greatest bee pastures known. It is a very heavy seed producer in very wide variations of climate.

Classified Advertisements

RATES, 4 CENTS PER WORD

NURSERY STOCK

TREES—All kinds of fruit and ornamental trees, vines, etc. Growers of general nursery stock. Lowest quotations given on application. Send us your want list. Can also use a few good salesmen. Albany Nurseries, Albany, Ore.

NURSERY STOCK—Italian Prune Trees and trees of all kinds. Berries and small fruits of all varieties. Buy direct and save 50 per cent. Brooks Nursery, Lafayette, Oregon.

HOMESPUN TOBACCO—10 lbs., $2.50; 20 lbs., $4, c. o. d. Ford Tobacco Co., Mayfield, Ky.

FARMS FOR SALE

FOR SALE—17 55/100 acres all cleared in Willamette Valley 30 miles from Portland. Splendid fruit or nut land. $200 per acre. Terms if desired. B. L. Herbert, 51 E 8th St., North, Portland, Oregon.

WANTED—To hear from owner of good ranch for sale. State cash price, full particulars. D. F. Bush, Minneapolis, Minn.

CUT-OVER and Developed Lands, 15 to 25 miles N. E. Spokane; extra good soil; spring brooks; grows grain, vegetables hay, fruits; several developed ranches; few stock ranches; $10 to $20 acre; 10 years' time, 6 per cent interest. Free lumber. Write owners for free book. Edward & Bradford Lumber Co., Elk, Washington.

BIG APPLE ORCHARD and by-products plant in famous Southern-Pennsylvania Apple Belt. J. P. Stewart, 305 Carlisle Ave., York, Pa.

HAVE A WONDERFUL piece of fruit land in Josephine county, Oregon. It is sub-irrigated, deep red soil; on railway; 20 acres; some bearing cherries, rest ready to plant. Price, $3000, only $2000 cash. Box 44, Hugo, Oregon.

WANT TO HEAR from owner having farm for sale; give particulars and lowest price. John J. Black, 197th street, Chippewa Falls, Wisconsin.

YAKIMA VALLEY BARGAIN—15 acres rich soil, irrigated; 4 alfalfa; fruit, strawberries, some barley; house, outbuildings, well. Owner, R. 1, Box 147a, Kennewick, Wash.

MISCELLANEOUS

HAPPY HOME HONEY—From blossoms of alfalfa and sweet clover, in liquid form; 6 10-lb. pails, $9.00; 1 60-lb. can $8.40; 2 cans, $16.00, at Mabton. H. N. Paul, Mabton, Washington.

HOMESPUN TOBACCO—Chewing, ten pounds, $3; 20 pounds, $5. Smoking, 10 pounds, $2.50; 20 pounds, $4. Farmers Union, Mayfield, Ky.

POULTRY

PETALUMA HATCHERY—Established 1902 by L. W. Clark. Chicks every Monday and Thursday, White and Brown Leghorns. Heavy laying strain. Safe delivery guaranteed. Send for prices and terms. L. W. CLARK, 615 Main St., Petaluma, Calif.

PULLETS—We can supply O. A. C. and Tancred White Leghorn Pullets. Rhode Island Reds and Barred Rocks at all ages—some ready to lay. Also one and two year old hens, good breeders. Exceptionally fine range-raised birds. Portland Seed Co., 180 Front St., Portland, Ore.

SALESMEN WANTED

MEN with proven ability capable of selling a line of high grade nursery stock on a commission contract. Weekly cash advance. Splendid territory may be had by answering immediately.
SALEM NURSERY CO.
427 Oregon Building Salem, Oregon

AGENTS WANTED—Our prices are right. Columbia Nursery Co., 1490 Union Ave., No., Portland, Oregon.

BITS ABOUT FRUIT AND FRUITMEN

SHIPMENT of citrus fruits by sea from California to New York via the Panama Canal is being resumed on a large scale, according to freight traffic officials of the Admiral Line, agent on the Pacific coast for the North Atlantic & Western Steamship company. During the recent hot weather period in the East, when an unusual demand caused prices to advance rapidly the growers resorted to the overland expresses, but the market since has become stabalized again, and the fruit shipping agencies are returning once more to the water lines and their lower rates. Two weeks before its sailing date, August 20, space was engaged on the steamship *Springfield* for approximately 400 tons of oranges and lemons, and the Admiral Line has been advised that heavier shipments may be expected when the crop of navals begins to come in. With the opening of the apple shipping season in the Pacific Northwest shipments by steamer to the atlantic Coast and abroad will be greatly increased and the largest tonnage handled in the history of water transportation of fruits from the Pacific coast.

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WITH the quantity of cherries preserved in brine this year in Italy greatly reduced the outlook for good prices for the home product is looked upon as exceedingly bright. The reduction in the output of preserved cherries in Italy is due to untimely rains which caused a total failure of the sour varieties and a falling off of other kinds of 50 per cent. The United States has been the principal market for the preserved cherries of Italy taking 7,387,030 pounds, valued at $1,497,755 in 1920. Owing to the tariff that has been placed on the importation of preserved cherries by the United States Italian exporters are said to be devoting their attention to developing markets in other countries.

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ACCORDING to late advices received from London representatives of American apple exporting houses the outlook for American apples in British markets is very bright this year. These advices say that the British fruit crop has been almost entirely ruined by drouth. There will be little, if any, marketable crop of the late varieties of apples while the early varieties will be of a very inferior quality. With the industrial situation righting itself and the purchasing power of the public becoming better, coupled with the fact that exchange is becoming more equalized, it is expected that the export season for box apples will be more than satisfactory.

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ON HIS return recently from a trip through the Middle West which included the states of Minnesota, Nebraska, Missouri, Iowa and Illinois, F. Benz, general agricultural agent of the Northern Pacific railroad, reported that this section of the country will have to have Northwest apples this year, but that Western growers must keep in mind that Eastern people will not buy apples this year at extremely high prices. Mr. Benz predicts that if the box apple crop is started this year at prices that will bring a reasonable profit it will be cleaned up early in the season.

TO PROVIDE men and women to harvest, pack and ship the enormous crop of apples now approaching maturity, a free employment agency will be established at Wenatchee. To harvest and ship the apple crop of the Wenatchee district, now estimated at nearer 16,000 cars than 15,000, the original forecast, efforts are being made to start picking a week or two earlier than usual. The exceptionally favorable weather and the healthful condition of the trees has caused the apples to grow faster than ever before.

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President Hitz of the Western Fruit Jobbers' Association announces that the next annual meeting of the association will be held at Fort Worth, Texas, beginning January 16.